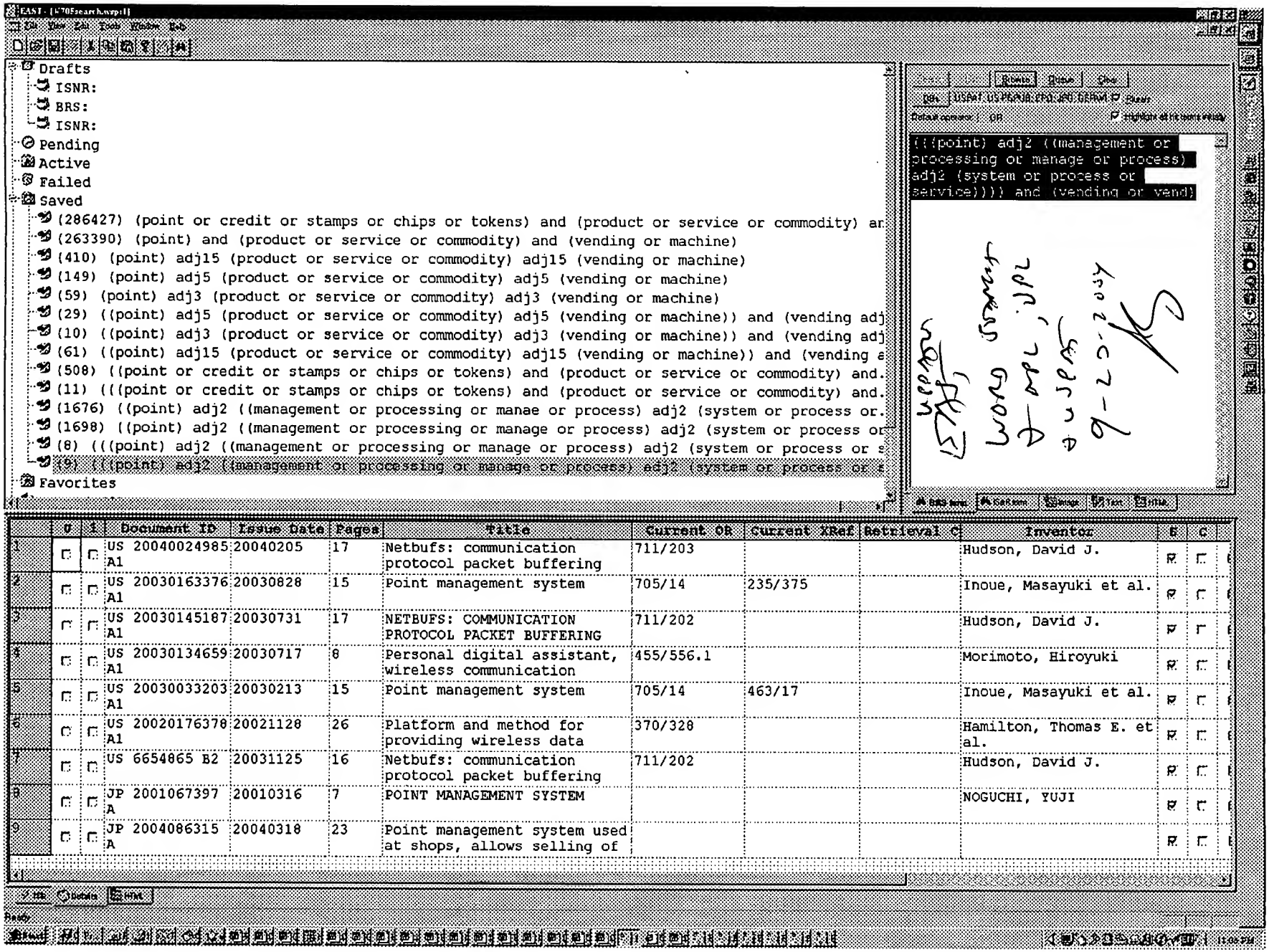

	O	I	Document ID	Issue Date	Pages	Title	Current OR	Current XRef	Retrieval C	Inventor	E	C
1	☐	☐	US 20040024985 A1	20040205	17	Netbufs: communication protocol packet buffering	711/203			Hudson, David J.	☑	☐
2	☐	☐	US 20030163376 A1	20030828	15	Point management system	705/14	235/375		Inoue, Masayuki et al.	☑	☐
3	☐	☐	US 20030145187 A1	20030731	17	NETBUFS: COMMUNICATION PROTOCOL PACKET BUFFERING	711/202			Hudson, David J.	☑	☐
4	☐	☐	US 20030134659 A1	20030717	8	Personal digital assistant, wireless communication	455/556.1			Morimoto, Hiroyuki	☑	☐
5	☐	☐	US 20030033203 A1	20030213	15	Point management system	705/14	463/17		Inoue, Masayuki et al.	☑	☐
6	☐	☐	US 20020176378 A1	20021128	26	Platform and method for providing wireless data	370/328			Hamilton, Thomas E. et al.	☑	☐
7	☐	☐	US 6654865 B2	20031125	16	Netbufs: communication protocol packet buffering	711/202			Hudson, David J.	☑	☐
8	☐	☐	JP 2001067397 A	20010316	7	POINT MANAGEMENT SYSTEM				NOGUCHI, YUJI	☑	☐
9	☐	☐	JP 2004086315 A	20040318	23	Point management system used at shops, allows selling of					☑	☐

```
### Status: Path 1 of [Dialog Information Services via Modem]

### Status: Initializing TCP/IP using (UseTelnetProto 1 ServiceID pto-dialog)
Trying 31060000009998...Open

DIALOG INFORMATION SERVICES
PLEASE LOGON:
 ******** HHHHHHHH SSSSSSSS?
### Status: Signing onto Dialog
 ********
ENTER PASSWORD:
 ******** HHHHHHHH SSSSSSSS? ********
Welcome to DIALOG
### Status: Connected


Dialog level 04.13.01D

Last logoff:  17sep04 07:50:14
Logon file405 21sep04 22:08:49
            *** ANNOUNCEMENT ***
                      ***
--Connect Time joins DialUnits as pricing options on Dialog.
See HELP CONNECT for information.
                      ***
--SourceOne patents are now delivered to your email inbox
as PDF replacing TIFF delivery. See HELP SOURCE1 for more
information.
                      ***
--Important Notice to Freelance Authors--
See HELP FREELANCE for more information
                      ***
NEW FILES RELEASED
***F-D-C Gold/Silver Sheet (File 184)
***BIOSIS Toxicology (File 157)
***IPA Toxicology (File 153)
                      ***
UPDATING RESUMED
                      ***
RELOADED
***Toxfile (File 156)

REMOVED
                      ***

     >>> Enter BEGIN HOMEBASE for Dialog Announcements <<<
     >>>    of new databases, price changes, etc.      <<<
                      ****
CORE is set ON as an alias for 15,9,623,810,275,624,813,636,621,16,160,148,20,77,35,583
,2,65,233,99,473,474,475,348,349,347,278,634,256.
HILIGHT set on as '*'
KWIC is set to 50.
* * * *
SYSTEM:HOME
Cost is in DialUnits
Menu System II: D2 version 1.7.9 term=ASCII
                        *** DIALOG HOMEBASE(SM) Main Menu ***

 Information:
  1.  Announcements (new files, reloads, etc.)
  2.  Database, Rates, & Command Descriptions
  3.  Help in Choosing Databases for Your Topic
  4.  Customer Services (telephone assistance, training, seminars, etc.)
  5.  Product Descriptions

 Connections:
```

```
  6.  DIALOG(R) Document Delivery
  7.  Data Star(R)

    (c) 2003 Dialog, a Thomson business.      All rights reserved.

      /H = Help            /L = Logoff          /NOMENU = Command Mode


Enter an option number to view information or to connect to an online
 service.  Enter a BEGIN command plus a file number to search a database
(e.g., B1 for ERIC).
?B CORE

>>>          77 does not exist
>>>         278 does not exist
>>>2 of the specified files are not available
       21sep04 22:08:59 User243008 Session D131.1
            $0.00    0.200 DialUnits FileHomeBase
     $0.00  Estimated cost FileHomeBase
     $0.03  TELNET
     $0.03  Estimated cost this search
     $0.03  Estimated total session cost   0.200 DialUnits


SYSTEM:OS  - DIALOG OneSearch
  File  15:ABI/Inform(R) 1971-2004/Sep 21
        (c) 2004 ProQuest Info&Learning
*File  15: Alert feature enhanced for multiple files, duplicate
removal, customized scheduling. See HELP ALERT.
  File   9:Business & Industry(R) Jul/1994-2004/Sep 21
        (c) 2004  The Gale Group
  File 623:Business Week 1985-2004/Sep 20
        (c) 2004 The McGraw-Hill Companies Inc
  File 810:Business Wire 1986-1999/Feb 28
        (c) 1999 Business Wire
  File 275:Gale Group Computer DB(TM) 1983-2004/Sep 21
        (c) 2004 The Gale Group
  File 624:McGraw-Hill Publications 1985-2004/Sep 20
        (c) 2004 McGraw-Hill Co. Inc
*File 624: Homeland Security & Defense and 9 Platt energy journals added
Please see HELP NEWS624 for more
  File 813:PR Newswire 1987-1999/Apr 30
        (c) 1999 PR Newswire Association Inc
  File 636:Gale Group Newsletter DB(TM) 1987-2004/Sep 21
        (c) 2004 The Gale Group
  File 621:Gale Group New Prod.Annou.(R) 1985-2004/Sep 21
        (c) 2004 The Gale Group
  File  16:Gale Group PROMT(R) 1990-2004/Sep 21
        (c) 2004 The Gale Group
*File  16: Alert feature enhanced for multiple files, duplicate
removal, customized scheduling. See HELP ALERT.
  File 160:Gale Group PROMT(R) 1972-1989
        (c) 1999 The Gale Group
  File 148:Gale Group Trade & Industry DB 1976-2004/Sep 21
        (c)2004 The Gale Group
*File 148: Alert feature enhanced for multiple files, duplicate
removal, customized scheduling. See HELP ALERT.
  File  20:Dialog Global Reporter 1997-2004/Sep 21
        (c) 2004 The Dialog Corp.
  File  35:Dissertation Abs Online 1861-2004/Aug
        (c) 2004 ProQuest Info&Learning
  File 583:Gale Group Globalbase(TM) 1986-2002/Dec 13
        (c) 2002 The Gale Group
*File 583: This file is no longer updating as of 12-13-2002.
  File   2:INSPEC 1969-2004/Sep W2
        (c) 2004 Institution of Electrical Engineers
*File   2: Alert feature enhanced for multiple files, duplicates
```

```
removal, customized scheduling. See HELP ALERT.
  File  65:Inside Conferences 1993-2004/Sep W3
        (c) 2004 BLDSC all rts. reserv.
  File 233:Internet & Personal Comp. Abs. 1981-2003/Sep
        (c) 2003 EBSCO Pub.
  File  99:Wilson Appl. Sci & Tech Abs 1983-2004/Aug
        (c) 2004 The HW Wilson Co.
  File 473:FINANCIAL TIMES ABSTRACTS 1998-2001/APR 02
        (c) 2001 THE NEW YORK TIMES
*File 473: This file will not update after March 31, 2001.
It will remain on Dialog as a closed file.
  File 474:New York Times Abs 1969-2004/Sep 20
        (c) 2004 The New York Times
  File 475:Wall Street Journal Abs 1973-2004/Sep 20
        (c) 2004 The New York Times
  File 348:EUROPEAN PATENTS 1978-2004/Sep W02
        (c) 2004 European Patent Office
  File 349:PCT FULLTEXT 1979-2002/UB=20040916,UT=20040909
        (c) 2004 WIPO/Univentio
  File 347:JAPIO Nov 1976-2004/May(Updated 040903)
        (c) 2004 JPO & JAPIO
*File 347: JAPIO data problems with year 2000 records are now fixed.
Alerts have been run.  See HELP NEWS 347 for details.
  File 634:San Jose Mercury  Jun 1985-2004/Sep 19
        (c) 2004 San Jose Mercury News
  File 256:TecInfoSource 82-2004/Jul
        (c)2004 Info.Sources Inc

      Set  Items  Description
      ---  -----  -----------
?s (point (2n) (management or processing or manage or process) (2n) (system or process
or service)) and (vending or vend)
Processing
Processing
Processed  10 of  27 files ...
Processing
Processing
Processed  20 of  27 files ...
Processing
Processing
Completed processing all files
         6862677  POINT
        13837549  MANAGEMENT
         5623715  PROCESSING
         2257959  MANAGE
         8772017  PROCESS
        15041087  SYSTEM
         8772017  PROCESS
        14906376  SERVICE
           78742  POINT(2N)(((MANAGEMENT OR PROCESSING) OR MANAGE) OR
                  PROCESS)(2N)((SYSTEM OR PROCESS) OR SERVICE)
          107756  VENDING
            8064  VEND
      S1     348  (POINT (2N) (MANAGEMENT OR PROCESSING OR MANAGE OR
                  PROCESS) (2N) (SYSTEM OR PROCESS OR SERVICE)) AND
                  (VENDING OR VEND)
?s s1 pd<20002010
>>>Term "PD" in invalid position
?s s1 and pd<20002010
>>>File 15 processing for PD=  : PD=20002010
>>>    started at PD=710000 stopped at PD=920121
>>>File 9 processing for PD=  : PD=20002010
>>>    started at PD=100305 stopped at PD=970910
>>>File 810 processing for PD=  : PD=20002010
>>>    started at PD=850116 stopped at PD=911124
>>>File 275 processing for PD=  : PD=20002010
>>>    started at PD=140103 stopped at PD=871108
```

```
>>>File 624 processing for PD=  : PD=20002010
>>>    started at PD=104 stopped at PD=911203
>>>File 813 processing for PD=  : PD=20002010
>>>    started at PD=100000 stopped at PD=900914
>>>File 636 processing for PD=  : PD=20002010
>>>    started at PD=19880101 stopped at PD=19940318
>>>File 621 processing for PD=  : PD=20002010
>>>    started at PD=00000000 stopped at PD=19910208
>>>File 16 processing for PD=  : PD=20002010
>>>    started at PD=19900101 stopped at PD=19950623
Processing
Processed  10 of  27 files ...
>>>File 160 processing for PD=  : PD=20002010
>>>    started at PD=2103 stopped at PD=770314
>>>File 148 processing for PD=  : PD=20002010
>>>    started at PD=140105 stopped at PD=820807
Processing
>>>One or more prefixes are unsupported
>>>  or undefined in one or more files.
>>>File 583 processing for PD=  : PD=20002010
>>>    started at PD=100001 stopped at PD=8803110
>>>File 233 processing for PD=  : PD=20002010
>>>    started at PD=1201 stopped at PD=990321
>>>File 99 processing for PD=  : PD=20002010
>>>    started at PD=DEC.1200 stopped at PD=19910204
Processed  20 of  27 files ...
>>>File 474 processing for PD=  : PD=20002010
>>>    started at PD=101111 stopped at PD=730607
>>>File 475 processing for PD=  : PD=20002010
>>>    started at PD=191111 stopped at PD=800219
>>>File 348 processing for PD=  : PD=20002010
>>>    started at PD=78 stopped at PD=981210
Processing
>>>File 347 processing for PD=  : PD=20002010
>>>    started at PD=197610 stopped at PD=19830411
>>>File 634 processing for PD=  : PD=20002010
>>>    started at PD=850602 stopped at PD=891207
Completed processing all files
            348  S1
       24686837  PD<20002010
      S2    125  S1 AND PD<20002010
?rd
>>>Duplicate detection is not supported for File 348.
>>>Duplicate detection is not supported for File 349.
>>>Duplicate detection is not supported for File 347.

>>>Records from unsupported files will be retained in the RD set.
...examined 50 records  (50)
...examined 50 records  (100)
...completed examining records
      S3    123  RD (unique items)
?s s1 not py>2000
Processing
Processed  10 of  27 files ...
Completed processing all files
            348  S1
       36312416  PY>2000
      S4    175  S1 NOT PY>2000
?s s1 and py<2000
Processing
Processed  10 of  27 files ...
Processing
Processed  20 of  27 files ...
Completed processing all files
            348  S1
       61851414  PY<2000
      S5    147  S1 AND PY<2000
```

```
?s s5 and ((portable or mobile or transportable or handheld) (2n) (terminal or PDA))
Processed  20 of  27 files ...
Completed processing all files
             147  S5
          782430  PORTABLE
         2501869  MOBILE
           35324  TRANSPORTABLE
          254988  HANDHELD
         1486281  TERMINAL
          118746  PDA
           58441  (((PORTABLE OR MOBILE) OR TRANSPORTABLE) OR
                  HANDHELD) (2N) (TERMINAL OR PDA)
      S6       3  S5 AND ((PORTABLE OR MOBILE OR TRANSPORTABLE OR HANDHELD)
                  (2N) (TERMINAL OR PDA))
?s s5 and ((portable or mobile or transportable or handheld) (2n) (terminal or pda))
             147  S5
          782430  PORTABLE
         2501869  MOBILE
           35324  TRANSPORTABLE
          254988  HANDHELD
         1486281  TERMINAL
          118746  PDA
           58441  (((PORTABLE OR MOBILE) OR TRANSPORTABLE) OR
                  HANDHELD) (2N) (TERMINAL OR PDA)
      S7       3  S5 AND ((PORTABLE OR MOBILE OR TRANSPORTABLE OR HANDHELD)
                  (2N) (TERMINAL OR PDA))
?S S4 AND ((PORTABLE OR MOBILE OR TRANSPORTABLE OR HANDHELD) (2N) (TERMINAL OR PDA))
             175  S4
          782430  PORTABLE
         2501869  MOBILE
           35324  TRANSPORTABLE
          254988  HANDHELD
         1486281  TERMINAL
          118746  PDA
           58441  (((PORTABLE OR MOBILE) OR TRANSPORTABLE) OR
                  HANDHELD) (2N) (TERMINAL OR PDA)
      S8       4  S4 AND ((PORTABLE OR MOBILE OR TRANSPORTABLE OR HANDHELD)
                  (2N) (TERMINAL OR PDA))
?S S3 AND ((PORTABLE OR MOBILE OR TRANSPORTABLE OR HANDHELD) (2N) (TERMINAL OR PDA))
             123  S3
          782430  PORTABLE
         2501869  MOBILE
           35324  TRANSPORTABLE
          254988  HANDHELD
         1486281  TERMINAL
          118746  PDA
           58441  (((PORTABLE OR MOBILE) OR TRANSPORTABLE) OR
                  HANDHELD) (2N) (TERMINAL OR PDA)
      S9       5  S3 AND ((PORTABLE OR MOBILE OR TRANSPORTABLE OR HANDHELD)
                  (2N) (TERMINAL OR PDA))
?s s2 and ((portable or mobile or transportable or handheld) (2n) (terminal or pda))
             125  S2
          782430  PORTABLE
         2501869  MOBILE
           35324  TRANSPORTABLE
          254988  HANDHELD
         1486281  TERMINAL
          118746  PDA
           58441  (((PORTABLE OR MOBILE) OR TRANSPORTABLE) OR
                  HANDHELD) (2N) (TERMINAL OR PDA)
     S10       5  S2 AND ((PORTABLE OR MOBILE OR TRANSPORTABLE OR HANDHELD)
                  (2N) (TERMINAL OR PDA))
?
```

?t s11/full/1

11/9/1 (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00731165 **Image available**
METHOD AND APPARATUS FOR REMOTE TELEPHONY SWITCH CONTROL
PROCEDE ET APPAREIL POUR COMMANDE DE COMMUTATION TELEPHONIQUE A DISTANCE
Patent Applicant/Assignee:
AERIS COMMUNICATIONS INC, 1245 S. Winchester Boulevard, Suite 201, San Jose, CA 95128, US, US (Residence), US (Nationality)
Inventor(s):
LADUE Christophe Karl, 912 Third Street, Santa Cruz, CA 95060, US
Legal Representative:
CALDWELL Gregory D, Blakely, Sokoloff, Taylor & Zafman, 7th floor, 12400 Wilshire Boulevard, Los Angeles, CA 90025-1026, US
Patent and Priority Information (Country, Number, Date):
Patent: WO 200044152 A1 *20000727* (WO 0044152)
Application: WO 2000US1330 20000119 (PCT/WO US0001330)
Priority Application: US 99234612 19990120
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Main International Patent Class: H04M-003/00
Publication Language: English
Filing Language: English
Fulltext Word Count: 24362

English Abstract
A command, such as an application specific command, is communicated from a central host to a remote station (213) via a cellularmobile radio network (102).

H[31 AAM WORD 3 RTSC
151
,@.O 000J0011011010011 0000 0001 0010 ooll 0100
F NAWCIDIG1 DIG2 JDIG3 DIG4 DIG5 DIG6 DIG7 DIG8 4@5
. 4 4 6 6 4 2 2 6 7 132 CF
H[41 AAM WORD 4 RTSC
0 000 0011 0110 0011 0000 000+ w 6 %J%j
15@ F NAW DIG1 DIG2 DIG3 DIG4 DIG5 I DIG8
1 5 0 0 0 0 3
Fig. 1,3
17@j
INFORMATION ELEMENT BIT LENGTH (BITS)
ASSIGNMENT
F3 01 2
essage Data Word I to N- I
En Message Data x....x 34
ID x x 1 2
ci
174J
INFORMATION ELEMENT BIT LENGTH (BITS)
ASSIGNMENT
F3 01 2
Message Data x....x 34
ID x.....x 12
177J
Fig. 74
INFORMATION ELEMENT BIT LENGTH (BITS)
ASSIGNMENT
T T
tz 1 2 01 2
DCC xx 2
N-1
MESSAGE DATA x.....x 24
ID x.....x 12
tl
RMATION ELEMENT BIT LENGTH (BITS)
ASSIGNMENT
t-d T 1 T 2 00 2
w
DCC xx 2
essage Data Word N
MESSAGE DATA x.....x .24
x.....x 12
)/go 75
k'I 81
/ASP MPCD REQUEST 92 1 0
12C@ 1 1 0 1
2 1
DLR
En ic
N
mL8-@L. MPCD 8 no
IREGNOT
[CM
regnot
1 2
REGCANC
regc
R TREQ
18 0
19
routreq(TL
19 71
PCD MESSAGE/PAGE CALL DELIVERY(MPCD)
18
90 MPCD EVENT RELEASE
an 2 6 (200

Fig. 16 r, .7 @j -
MDMF MESSAGE TYPE
Channel Seizure Signal Calling Number Delivery
Mark Signal
(-198 -*(VisuGI) Message Waiting Indicator
Message Type
SDMF Call Setup
Channel Seizure Signal Mark Bits (0-100) Service Test
Mark Signal Message Length r(Visual) Message Waiting Indicoto
Message Type Mork Bits (0-100)
04
Mark Bits (0-100) Parameter Type
05
(-201 r@21 1
ci Message Length Mork Bits (0-100)
PARAMETER TYPE
En Mork Bits (0-100)
Parameter Length Date & Time
Messoge Word
H Mark Bits (0-100) Calling Number
Mork Bits (0-100) 2 Parameter Word Dialable Directory Number
More Message Words Mork Bits (0-100) Reason for absence of Directc
Mork Bits (0-100) Reason for Redirection
3 More Parameter Words
Checksum Call Qualifier
Mork Bits (0-100) Calling Name
Morkout
More Parameter Message Reason for absence of Coiling
Mark Bits (0-100) (Visual) Message Waiting Indic(
Checksum
Markout
Fig* 17
r2 7
FOCC anal g forward control channel message. 3 1
CA 4OX5 4OX5 4OX5 4OX5 4OX5 40X5 IvC
Ci
tz
1 0 27
t2l 0
21 gs,,@ 02
t2i 41)Assigns or 23 21 E
RESERVS VCH
MSC 23 2-' 2301Communicartor transmits
28--,@ MRFAC packet.
2 22t
2 2 G@ @@ Radio firmwore causes tune to
IVCDM 3 1.1 NCHM mismacth VCH#0000.
22 3IVCCT 2 4 6@SSI)Task 2 3
222@ 4 CIVCH 2 4 100 rns. 22 7 IDLE Task. 2 2
5 Otherwise.
223@- sk 2 3 225`@
224- Task.
0 to 500 rns
225r- Occupancy.
226@
WrERNATIONAL SEARCH REPORT International application No.
PCT/USOO/01330
A. CLASSIFICATION OF SUBJECT MATTER
IPC(6) H04M 3/00
US CL 455/419
-According to International Patent Classification 0PQ or to both national classification and IPC
B. FIELDS SEARCHED
Minimum documentation searched (classification system followed by classification symbols)
U.S. : 455/419; 379/220, 127
Documentation searched other than minimum documentation to the extent

that such documents are included in the fields searched Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
C. DOCUMENTS CONSIDERED TO BE RELEVANT
-Category Citation of document, with indication, where appropriate, of the relevant passages Relevant to claim No.
A US 5s689,555 A (SONNENBERG) 18 November 1997 1-19
A US 59696,816 A (SONNENBERG) 09 December 1997 1-19
A US 5*6999416 A (ATKINS) 16 December 1997 1-19
ElFurther documents are listed in the continuation of Box C. 1:1 See patent family annex. Special categories of cited dricuments: later document published after the international filing date or priority due sort Dot in conflict with the application but cited to understand the .A" document defining the general Mae of the art which is not considered to be principle or therity underlying the invention
of particular relevance
,X. document of particular relevance; the claimed invention cannot be
'E' earlier application or patent published on or aftr the international filing date considered novel or cannot be considered to involve an inventive step
when the document is taken alone
"Lo document which way throw doubts on priority claim(s) or which is cited to establish the publkation date of another citation or other special mum (as Y. document of particular relevance; the claimed invention cannot be
specified) considered to involve an inventive up when the document is combined with one or more other such documents, such combination
40o docurrient referring to an oral disclosure, use, cxhibifion or other means being obvious to a person skilled in the art apw document published prior to the international filing due but later than the W document member of the same patent family
priority date clsirr@t
Date of the actual completion of the international search Date of mailing of the international search report
06 March 2000 (06 2000) 0 6 APR 20no
Name and mailing address of the ISA/US d oWker
Commissioner of Patcm and Trademarks
Box PCT UMMING
Washirignin, D.C. 2MI
Facsimile No. (703)305-3230 Telephone No. 703 3900
Form PCT/ISA/210 (second sheet) (July 1998)

?t s9/3,k/1

9/3,K/1 (Item 1 from file: 348)

DIALOG(R)File 348:EUROPEAN PATENTS

01137147

COMMUNICATION CONTROL SYSTEM AND COMMUNICATION CONTROL METHOD
SYSTEM UND VERFAHREN ZUR KOMMUNIKATIONSSTEUERUNG
SYSTEME ET PROCEDE DE COMMANDE DE COMMUNICATIONS

PATENT ASSIGNEE:
Kunugi, Takanobu, (2956780), 558-18, Shimoyasumatu, Tokorozawa-shi, Saitama 359-0024, (JP), (Applicant designated States: all)
Kunugi, Yurako, (2956790), 558-18, Shimoyasumatu, Tokorozawa-shi, Saitama 359-0024, (JP), (Applicant designated States: all)
INVENTOR:
Kunugi, Takanobu, 558-18, Shimoyasumatu, Tokorozawa-shi, Saitama 359-0024 , (JP)
Kunugi, Yurako, 558-18, Shimoyasumatu, Tokorozawa-shi, Saitama 359-0024, (JP)
LEGAL REPRESENTATIVE:
Klunker . Schmitt-Nilson . Hirsch (101001), Winzererstrasse 106, 80797 Munchen, (DE)
PATENT (CC, No, Kind, Date): EP 1104158 A1 010530 (Basic)
WO 200008841 000217
APPLICATION (CC, No, Date): EP 99935053 990804; WO 99JP4203 990804

PRIORITY (CC, No, Date): JP 98233516 980805; JP 98286098 980922; JP 9966305 990312
DESIGNATED STATES: DE; FR; GB; IT
EXTENDED DESIGNATED STATES: AL; LT; LV; MK; RO; SI
INTERNATIONAL PATENT CLASS: H04M-015/00; H04M-015/16; H04M-003/42; H04M-003/00; H04M-011/00; H04B-007/26; H04Q-007/38; H04M-001/26
ABSTRACT WORD COUNT: 183
NOTE:
Figure number on first page: 0001

LANGUAGE (Publication,Procedural,Application): English; English; Japanese
FULLTEXT AVAILABILITY:

Available Text	Language	Update	Word Count
CLAIMS A	(English)	200122	2279
SPEC A	(English)	200122	15379
Total word count - document A			17658
Total word count - document B			0
Total word count - documents A + B			17658

...SPECIFICATION Presently, it is required to make a user contract with an international communication company in advance in order to make overseas telephone calls from a *mobile* communication *terminal* such as a portable telephone and PHS. That is, the user is required to submit a predetermined application sheet to the international communication company by...

...note.

While those described above are the cases when persons having been already using the mobile communication terminals make an international call from their own *mobile* communication *terminal*, they had to select one company from a plurality of mobile communication companies and to make a subscriber's contract with a mobile communication company in order to start to use the *mobile* communication *terminal*.

They had to write own name, address, a method of payment and others to a predetermined subscriber application sheet and to stamp thereon in making...

...temporarily.

Because the direct subscriber is the rental company in this case, the persons who do not have an address in Japan can use the *mobile* communication *terminal*.

Further, because the rental company takes the responsibility of the direct payment of the basic fee and rental fee, there is no demerit for the...

...a person who has no credit in Japan.

However, there is always a risk for the rental company that the user runs away with the *mobile* communication *terminal* without paying the high rental fee. It has been then necessary to ask to submit a large amount of deposit in advance in order to...debt of telephone charge. If the bad debt can be totally eliminated as described above, it becomes possible to make an international call from the *mobile* communication *terminal* immediately with a simple procedure without making a utility contract which requires the preliminary examination and the deposit with the international communication company in advance...

...charge as far as the call is made through this communication control system.

Therefore, the caller just needs to apply the caller number of own *mobile* communication *terminal* and to pay the prepaid money of certain amount or more and needs not to receive the rigid examination of the international communication company like the past in making an international call from the *mobile* communication *terminal* such as a portable telephone.

It is also possible to construct so as to record the charge systems of a plurality of communication companies per...per country (per region) and time zone per each communication company on the caller side.

It is supposed above that the subscriber contract of the *mobile*

communication *terminal* as the caller terminal has been finished between the caller himself and the mobile communication company. That is, the person who already owns the *mobile* communication *terminal* is allowed to readily make an international call using the *mobile* communication *terminal* and to properly use the plurality of international communication companies.

Therefore, persons who cannot make the subscriber contract of the *mobile* communication *terminal* from the beginning, i.e., persons who have no address domestically or the minorities who has no guarantor, cannot use this communication control system.

However, the persons who have no credit and cannot make the utility contract of the *mobile* communication *terminal* can use this system by adding call restricting means for limiting the calling destination of the caller terminal only to the telephone number for connecting...KDD), Japan Telecommunications (JT) and International Digital Communications (IDC) to connect/disconnect the line and to conduct processes for charging telephone charge between the caller *terminal* (*portable* telephone) 13 and a overseas called terminal 14 via the international communication companies A through C.

The communication control system 10 comprises a line switch...

...the line control part 24 corresponds to line connecting means and line disconnecting means.

A public line network 44a including a base station of the *mobile* communication *terminal* is interposed between the caller terminal 13 and the communication control system 10 and is connected with the line switch 16 via an ISDN line...limited to that and the caller side terminal may be a fixed type telephone set, a personal computer equipped with a communication function and a *portable* information *terminal* (*PDA*) and the like. The called terminal 32 is not also limited and may be a portable telephone beside a fixed type telephone set, a personal computer equipped with a communication function, a *portable* information *terminal* (*PDA*) and the like.

Internet may be also interposed between the caller side terminal and the called side terminal.

The system may be simplified so as...FIG. 11, the "process for transmitting information" is carried out via the telephone line and a process for disconnecting the line is executed at the *point* of time when the transmitting *process* is completed.

Or, when the charge system of the data is a meter-rate system, it is operable to calculate a transmission permissible time from...set including the portable telephone 100, a battery, a manual and others from the system operator. It is possible to acquire it from an automatic *vending* machine and a mail-order sales system as detailed later, beside acquiring at a service counter of an agent tied with the system operator.

This...realized.

At first, because no cumbersome procedure in starting to use the portable telephone 100 is required, the portable telephone 100 may be supplied by *vending* machines.

This *vending* machine may be set around arrival gates of an airport. Then, foreigners who come to Japan temporarily for tourism or business can acquire the set of the portable telephone 100, a battery and others by the *vending* machine by putting in 5,000 yen for example.

In this case, the battery of the portable telephone 100 is charged in advance so that...

...bad debt of telephone charge by using the inventive communication control system. Therefore, the caller is only required to tell the caller number of own *mobile* communication *terminal* and to pay the prepaid money of certain amount or more in making an international call from the *mobile* communication *terminal* such as a portable telephone and is not required to be examined rigidly by the international communication company like the past. Further, a plurality of...

```
?s s9 and ((point (2n) managment) and (vending or vend))
             5  S9
       6862677  POINT
         10509  MANAGMENT
```

```
              5  POINT(2N)MANAGMENT
         107756  VENDING
           8064  VEND
     S12       0  S9 AND ((POINT (2N) MANAGMENT) AND (VENDING OR VEND))
?s s8 and (point)
              4  S8
         6862677  POINT
     S13       4  S8 AND (POINT)
?t s13/3,k/1

 13/3,K/1     (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2004 WIPO/Univentio. All rts. reserv.

00731165    **Image available**
METHOD AND APPARATUS FOR REMOTE TELEPHONY SWITCH CONTROL
PROCEDE ET APPAREIL POUR COMMANDE DE COMMUTATION TELEPHONIQUE A DISTANCE
Patent Applicant/Assignee:
  AERIS COMMUNICATIONS INC, 1245 S. Winchester Boulevard, Suite 201, San
    Jose, CA 95128, US, US (Residence), US (Nationality)
Inventor(s):
  LADUE Christophe Karl, 912 Third Street, Santa Cruz, CA 95060, US
Legal Representative:
  CALDWELL Gregory D, Blakely, Sokoloff, Taylor & Zafman, 7th floor, 12400
    Wilshire Boulevard, Los Angeles, CA 90025-1026, US
Patent and Priority Information (Country, Number, Date):
  Patent:              WO 200044152 A1 20000727 (WO 0044152)
  Application:         WO 2000US1330 20000119  (PCT/WO US0001330)
  Priority Application: US 99234612 19990120
Designated States:
(Protection type is "patent" unless otherwise stated - for applications
prior to 2004)
  AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB
  GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA
  MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA
  UG UZ VN YU ZA ZW
  (EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
  (OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
  (AP) GH GM KE LS MW SD SL SZ TZ UG ZW
  (EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 24362

Fulltext Availability:
  Detailed Description
  Claims

Detailed Description
...  functions of MAP and TP for the purpose of maximizing switch, BSC and
  satellite station network bandwidth. The invention enables forward mobile
  and stationary communication *terminal* paging, *mobile* *terminal*
  velocity tracking, optimum base site management, and other important
  maintenance and testing functions, controlled from a remote location.

  Description of Related Art
  There are numerous...
...These command sets are used to initialize maintenance and test positions
  from a remote location, such as a specialized SS7 IS-41 compatible
  service control *point* (SCP), or service switch *point* (SSP).

  Specific IS-41 automatic roaming data packet protocols such as,
  Registration Notification invokes, Registration Cancellation invokes,
  Qualification Directives and Qualification Requests can be manipulated...

...still manually use the terminal while at the same time the terminals
  perform the inventions automatic functions. As such, these designated MMI
```

terminals become a *point*-of-presence (POP) on a designated host SS7 network or internet network. Single MMI terminals, and cascaded groups of terminals embodied in Host Network Management Centers can be attached as single network nodes with global, cluster and node originating *point* codes (OPC) and destination *point* codes (DPC), that are recognizable as SS7 POPs.

The invention also provides for unique message usage's of SS7 signaling protocols that are embodied in protection system status reporting, *vending* machine status reporting, mail drop box status reporting, motor vehicle tracking and location monitoring, automobile anti-theft and recovery, and many other related wireless data...

...SS7 based Transaction Capability Application Part (TCAP) protocols. These SS7 based TCAP protocols are controlled by a centralized IS-41 A, B and C compatible *Service* Control *Point* (SCP) data *management* hub facility, that operates within the network architecture of conventional public and private IS-41 based SS7 networks. These networks are provided to maintain complete...

...such as Qualification Directives, Qualification Requests, Registration Notifications, Registration Cancellations, and Service Profile Directives. These SS7 based protocols normally support specific types of Service Control *Point* (SCP) and/or Service Switch *Point* (SSP) data information. The invention utilizes the conventional packet configuration, while at same time manipulating the existing data structures contained within; to cause an enabling of new Maintenance Position instruction sets. These instruction sets are transmitted from a specialized *Service* Control *Point* (SCP) data *management* hub to a designated MMI terminal that is an IS-41 SS7 node that has its own global, cluster and node based; originating *point* code (OPC) and destination *point* code (DPC).

In accordance with the invention, a specialized SCP manipulates and transmits a standard but modified Qualification Directive data packet to a designated Visitor...in turn the MSC is connected to a host SS7 network via an MSC data link. The MSC is an SS7 network element service switch *point* (SSP). The MSC relays these application data status packets back to the SCP-HUB via a IS41 compatible SS7 network data link. The SCP-HLJB ...

...in the DLR and other subsystem data-bases will indicate what type of application specific communicator is involved; electrical meter reading, motor vehicle fleet management, *vending* machine status reporting and many others. Once the DLR interrogation is complete, the NMS subsystem creates a two-packet forward page-trigger-status response event...is co-located at the currently serving MSC or carrier network management center, and is deemed an SS7 network node with its own assigned destination *point* code (DPC) and originating *point* code (OPC). The MMI MAP software then examines the Qualification Directive packet's MIN and MSN fields 122, and retrieves the MIN information. Once the...the DLR 162. In fact with the addition of this special data processing stack, the invention creates a completely new approach to SS7 service control *point* (SCP) design, and operation. Typically conventional SS7 SCP nodes are inherently rigid in terms of how IS-41 automatic roaming packets are processed. The invention...

...such as command invokes and other information designated for forward transmission to communicators that are integrated to such devices as a GPS receivers, power meters, *vending* machines or other such apparatus. This particular base site for example, is configured to provide IS-136 TDMA digital traffic channel services, in addition to...and data traffic.

This large cellular, or PCS network also consist of a carrier network management center 117, with its own associated SS7 signaling transfer *point* (STP) 109a. Contained within the carrier network management center is a plurality of the invention's specially modified MMI MAP terminals 114. There is no...words contain such application information 159 as Global Positioning System (GPS) longitude and latitude

information. The data word can also include electrical meter status information, *vending* machine status and inventory information, and many other type of application specific information. This part of the packet is sent when an application specific communicator...installed in an associated switch equipment rack The card contains the inventions modified MAP software.

The card is also an SS7, internet, or ATM network *point*-of-presence. The card operates exactly in accord with the aforementioned MAP software processes and procedures.
The invention provides a complete bi-directional forward and...forwards it to the SCP-HUB 106 via an SS7 link 115. The 175 NPA is equated with the DLR's 162 SS7 based destination *point* code (DPQ. The MSC 102 uses this *point* code to route the packet to the DLR 162 via the associated SS7 network. This packet can contain both caller I.D. data bits and...

...name' message can contain such data as global positioning system (GPS) longitude and latitude location information, electoral power meter readout bits, motor vehicle status bits, *vending* machine inventory status, security system status reporting bits and other such information. However since the MPE 212 did not 'pick up' the call before going...HUB can therefore send application specific data packets that contain 'date & time' information to designated application specific communicators. This delivery can be accomplished in a *point*-to-*point* means and method or *point*-to-omni *point* broadcast means. When the communicators receive the 'date & time' caller I.D. information, they record the information and if necessary reset the communicator and/or...

Claim
... a network switch, the command comprising a MIN and ESN, comprises sending the command from the host to a signaling system 7 (SS7) service switching *point* (SSP) via a public switched telephone network, the command comprising a MIN and ESN.

4 The method of claim 2, wherein sending the command from...

...a network switch, the command comprising a MIN and ESN, comprises sending the command from the host to a signaling system 7 (SS7) service switching *point* (SSP) via a local area network, the command comprising a MIN and ESN.

5 The method of claim 2, wherein sending the command from the...

...a network switch, the command comprising a MIN and ESN, comprises sending the command from the host to a signaling system 7 (SS7) service switching *point* (SSP) via a Transport Control Protocol/Internet Protocol (TCP/IP) based-interrietwork, the command comprising a MIN and ESN.
6 The method of claim 2...

```
?t s8 and (point (2n) management)
>>>'AND' not allowed in command
?s s8 and (point (2n) management)
Processing
Processed  10 of  27 files ...
Completed processing all files
              4  S8
        6862677  POINT
       13837549  MANAGEMENT
          23696  POINT(2N)MANAGEMENT
     S14      3  S8 AND (POINT (2N) MANAGEMENT)
?t s14/3,k/1
```

14/3,K/1 (Item 1 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00731165 **Image available**

METHOD AND APPARATUS FOR REMOTE TELEPHONY SWITCH CONTROL
PROCEDE ET APPAREIL POUR COMMANDE DE COMMUTATION TELEPHONIQUE A DISTANCE

Patent Applicant/Assignee:
AERIS COMMUNICATIONS INC, 1245 S. Winchester Boulevard, Suite 201, San Jose, CA 95128, US, US (Residence), US (Nationality)
Inventor(s):
LADUE Christophe Karl, 912 Third Street, Santa Cruz, CA 95060, US
Legal Representative:
CALDWELL Gregory D, Blakely, Sokoloff, Taylor & Zafman, 7th floor, 12400 Wilshire Boulevard, Los Angeles, CA 90025-1026, US
Patent and Priority Information (Country, Number, Date):
Patent: WO 200044152 A1 20000727 (WO 0044152)
Application: WO 2000US1330 20000119 (PCT/WO US0001330)
Priority Application: US 99234612 19990120
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 24362

Fulltext Availability:
Detailed Description

Detailed Description
... functions of MAP and TP for the purpose of maximizing switch, BSC and satellite station network bandwidth. The invention enables forward mobile and stationary communication *terminal* paging, *mobile* *terminal* velocity tracking, optimum base site management, and other important maintenance and testing functions, controlled from a remote location.

Description of Related Art
There are numerous protection system status reporting, *vending* machine status reporting, mail drop box status reporting, motor vehicle tracking and location monitoring, automobile anti-theft and recovery, and many other related wireless data...

...SS7 based Transaction Capability Application Part (TCAP) protocols. These SS7 based TCAP protocols are controlled by a centralized IS-41 A, B and C compatible *Service* Control *Point* (SCP) data *management* hub facility, that operates within the network architecture of conventional public and private IS-41 based SS7 networks. These networks are provided to maintain complete...

...manipulating the existing data structures contained within; to cause an enabling of new Maintenance Position instruction sets. These instruction sets are transmitted from a specialized *Service* Control *Point* (SCP) data *management* hub to a designated MMI terminal that is an IS-41 SS7 node that has its own global, cluster and node based; originating point code...in the DLR and other subsystem data-bases will indicate what type of application specific communicator is involved; electrical meter reading, motor vehicle fleet management, *vending* machine status reporting and many others. Once the DLR interrogation is complete, the NMS subsystem creates a two-packet forward page-trigger-status response event...such as command invokes and other information designated for forward transmission to communicators that are integrated to such devices as a GPS receivers, power meters, *vending* machines or other such apparatus. This particular base site for example, is configured to provide IS-136 TDMA digital traffic channel services, in addition to...

words contain such application information 159 as Global Positioning System (GPS) longitude and latitude information. The data word can also include electrical meter status information, *vending* machine status and inventory information, and many other type of application specific information. This part of the packet is sent when an application specific communicator...name' message can contain such data as global positioning system (GPS) longitude and latitude location information, electoral power meter readout bits, motor vehicle status bits, *vending* machine inventory status, security system status reporting bits and other such information. However since the MPE 212 did not 'pick up' the call before going...

?t s14/3,k/2

14/3,K/2 (Item 2 from file: 349)

00418748 **Image available**

SYSTEMS AND METHODS FOR SECURE TRANSACTION MANAGEMENT AND ELECTRONIC RIGHTS PROTECTION

SYSTEMES ET PROCEDES DE GESTION DE TRANSACTIONS SECURISEES ET DE PROTECTION DE DROITS ELECTRONIQUES

Patent Applicant/Assignee:
INTERTRUST TECHNOLOGIES CORP,
Inventor(s):
GINTER Karl L,
SHEAR Victor H,
SIBERT W Olin,
SPAHN Francis J,
VAN WIE David M,

Patent and Priority Information (Country, Number, Date):
Patent: WO 9809209 A1 19980305
Application: WO 97US15243 19970829 (PCT/WO US9715243)
Priority Application: US 96706206 19960830
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GE GH HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZW GH KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 195626

Fulltext Availability:
Detailed Description

Detailed Description
... part, from use of other electronic information.

VDE Functional Properties
VDE is a cost-effective and efficient rights protection solution that provides a unified, consistent *system* for securing and managing transaction *processing*. VDE can.

(a) audit and analyze the use of content,
(b) ensure that content is used only in authorized ways, and
(c) allow infonnation regarding...form their design approach, specifications, and actual implementations. This approach could lead to a "seamless" integration of VDE functions and capabilities by threading metering/transaction *management* functionality throughout the *system* design and implementation.

The second approach would involve taking an existing set

of API (Application Programmer Interface) functions, and
incorporating references in the operating...

...function calls. This is sirnilar to the way that the current
Windows operating system is integrated with DOS, wherein DOS
serves as both the launch *point* and as a significant portion of
the kernel underpinning of the Windows operating system. This
approach would be also provide a high degree of 'seamless...of basic
instructions and intrinsic
data), whether or not said one or more sets of basic instructions
and intrinsic data are accessible at any given *point* in time.

Nlethod core 100U may be pararnete 'zed by an 'event
n
code' to pen-nit it to respond to different events in different...
?t s14/3,k/3

14/3,K/3 (Item 3 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT
(c) 2004 WIPO/Univentio. All rts. reserv.

00344642
SYSTEMS AND METHODS FOR SECURE TRANSACTION MANAGEMENT AND ELECTRONIC RIGHTS PROTECTION
SYSTEMES ET PROCEDES DE GESTION SECURISEE DE TRANSACTIONS ET DE PROTECTION ELECTRONIQUE DES DROITS
Patent Applicant/Assignee:
ELECTRONIC PUBLISHING RESOURCES INC,
Inventor(s):
GINTER Karl L,
SHEAR Victor H,
SPAHN Francis J,
VAN WIE David M,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9627155 A2 19960906
Application: WO 96US2303 19960213 (PCT/WO US9602303)
Priority Application: US 95388107 19950213
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AL AM AT AU AZ BB BG BR BY CA CH CN CZ DE DK EE ES FI GB GE HU IS JP KE
KG KP KR KZ LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE
SG SI SK TJ TM TR TT UA UG UZ VN KE LS MW SD SZ UG AZ BY KG KZ RU TJ TM
AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN
ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 207972

Fulltext Availability:
Detailed Description

Detailed Description
... by control program running on
microprocessor 520 and not supporting direct access to the
internal elements of an SPU 500.

Memory Management Unit 540
Memory *Management* Unit (MMU) 540, if present,
provides hardware support for memory management and virtual
memory management functions. It may also provide heightened
security by enforcing hardware...based tamper resistant barrier 674
provided
by BPE 655 may be provided, for example, by: introducing time
checks and/or code modifications to complicate the *process* of
stepping through code comprising a portion of kernel 688a and/or
a portion of component assemblies 690 using a debugger; using a
map of...opposed

```
  to being a kernel linked device driver), and then calls the LOAD
  entry point for the service. A successful return from the LOAD
  entry *point* will indicate that the *service* has properly loaded and
  is ready to accept requests,
  RPC LOAD CaU Example: SVC.LOAD (long service.id)
  This LOAD interface call is called by...

...they may require additional modules to
  be loaded. If the service is defined as "mountable," a RPC
  manager 732 will call the MOUNT subservice entry *point* with
  the requested subservice ID prior to opening an instance of a
  subservice.

  RPC MOUNT Call Example.

  SVC-MOUNT (long service.id, long subservice.id...
?s (point (2n) management) and (vending or vend) and (mobile or transportable or handhe
ld or pda or portable))
>>>Unmatched parentheses
?s ((point (2n) management) and (vending or vend) and (mobile or transortable or handhe
ld or pda or portable))
Processing
Processed  10 of  27 files ...
Completed processing all files
         6862677  POINT
        13837549  MANAGEMENT
           23696  POINT(2N)MANAGEMENT
          107756  VENDING
            8064  VEND
         2501869  MOBILE
               0  TRANSORTABLE
          254988  HANDHELD
          118746  PDA
          782430  PORTABLE
     S15       66  ((POINT (2N) MANAGEMENT) AND (VENDING OR VEND) AND
                   (MOBILE OR TRANSORTABLE OR HANDHELD OR PDA OR PORTABLE))
?rd
>>>Duplicate detection is not supported for File 348.
>>>Duplicate detection is not supported for File 349.
>>>Duplicate detection is not supported for File 347.

>>>Records from unsupported files will be retained in the RD set.
...examined 50 records  (50)
...completed examining records
     S16       48  RD (unique items)
?s s16 not py<2000
Processing
Processed  10 of  27 files ...
Processing
Processed  20 of  27 files ...
Completed processing all files
               48  S16
         61851414  PY<2000
     S17       35  S16 NOT PY<2000
?s s16 not PY>2000
Processing
Processed  10 of  27 files ...
Completed processing all files
               48  S16
         36312416  PY>2000
     S18       26  S16 NOT PY>2000
?rd
>>>Duplicate detection is not supported for File 348.
>>>Duplicate detection is not supported for File 349.
>>>Duplicate detection is not supported for File 347.

>>>Records from unsupported files will be retained in the RD set.
```

...completed examining records
     S19   26 RD (unique items)
?t s19/3k/1
>>>'3K' not a valid format name
?t s19/3,k/1

19/3,K/1   (Item 1 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

01139523 97-88917
Sourcebook '96
Anonymous
Progressive Grocer Sourcebook '96 Supplement PP: Cover-48 Dec 1995
ISSN: 0033-0787 JRNL CODE: PGR
WORD COUNT: 18136

...TEXT: 800-8001

STATEMENT: Telxon provides a new revolutionary retail information and operational concept, "The Wireless Store." The wireless store provides the platform for wireless POS, *portable* point-of-sale and real time in-store merchandise management applications. Telxon solutions provide for enhanced customer service, price integrity, improved operational performance and the ...

... Group provides consulting services, project management, system integration services and retail solution packages.

COMPANY STATEMENT: Telxon Corporation is a leading global manufacturer of wireless and *portable* tele-transaction systems. The company integrates advanced *Portable* Tele-Transaction Computers (PTCs) with wireless and network communication technology, a wide array of peripherals and application-specific software for its customers in more than...including maintenance, cost of ownership analysis, network integration and business process re-engineering. Applications are available for point-of-sale, imaging, inventory management, merchandising, shelf *management*, etc.

* *POINT* OF SALE SYSTEMS

Epson America, Inc. OEM Division 20770 Madrona Avenue Torrance, CA 90509

PHONE: (310) 787-6300 FAX: (310) 782-5350

E-MAIL: http... designed specifically for PC-POS systems, includes slip, receipt, journal printers and multi-functional, high-speed station printers. Epson's line of retail components includes *handheld* computers, large touchscreen LCDs, display units, and the new small footprint IT-U375 and T-U950, which combine a custom IBM compatible Intel 486 PC...

... distribution, authorized VAR programs, national advertising, training, authorized service programs, and access to Epson's complete line of products including all retail printers and peripherals, *handheld* computers, standard and notebook PCs, IC cards, scanners, floppy and optical disk drives, as well as Epson's impact, inkjet and laser printers.

MGV America...or ordering.

SPECIALIZATION: Four D, Inc. manufactures the following Small Comforts(R) products: Shop-Along Child Carrier, Shop-Along Infant Carrier, Diaper Changing Table, Diaper *Vending* Machine, Baby Wait Station, *Mobile* Diaper Changing Center, Cabinet Diaper Changing Center, Diaper Waste Receptacles, Changing Pads, Diaper Refill Kits and grocery cart Child Safety Straps. Custom colors available. Four...or ordering.

SPECIALIZATION: Four D, Inc., manufactures the following Small Comforts(R) products: Shop-Along Child Carrier, Shop-Along Infant Carrier, Diaper

Changing Table, Diaper *Vending* Machine, Baby Wait Station, *Mobile* Diaper Changing Center, Cabinet Diaper Changing Center, Diaper Waste Receptacles, Changing Pads, Diaper Refill Kits and grocery cart Child Safety Straps. Custom colors available. Four...
?t s19/3,k/2

19/3,K/2 (Item 1 from file: 16)
DIALOG(R)File 16:Gale Group PROMT(R)

06415862 Supplier Number: 54898702 (USE FORMAT 7 FOR FULLTEXT)
Bar Code.
Automatic I.D. News, v15, n7, ps6
June, 1999
Language: English Record Type: Fulltext
Document Type: Magazine/Journal; Trade
Word Count: 6125

(USE FORMAT 7 FOR FULLTEXT)
TEXT:
...recording, work-in-process monitoring, quality control, check-in/check-out, sortation, order entry, document tracking, access control, personal identification, shipping and receiving, warehousing, route *management*, *point*-of-sale operations and in healthcare applications from tracking medicinal usage to patient billing.
... other facilities. Other uses are for time and attendance systems, inventory tracking, personnel identification, amusement parks and games, manufacturing process control, transit fare collection and *vending*.
Magnetic stripe technology allows for the storage of moderate amounts of data in a small area. A single magnetic stripe can have several tracks of...
...are for telephone toll calls and mass- transit tickets. Other uses include student meal programs; bridge, tunnel and road fees; mass-transit tickets; video clubs; *vending* machines; and driver's licenses encoded with a specific value and then used to purchase goods or services. More than 10 billion magnetic stripe cards...PCs is supported. Data files are easily accessed, edited or appended with a momentary contact using a simple probe connected to a variety of standard *portable* data collection terminals, laptops or PCs. Data collected from the contact memory tag can be downloaded to a spreadsheet or database. Often considered a low...scan only a single line and provide higher accuracy. Transaction readers also are typically mounted on some sort of mechanical transport. Hand-held readers facilitate *portable* data entry. Libraries sometimes use them to scan the International Standard Book Number (ISBN) when readers check out books. Hand-held readers also are used...in two efficient modes of operation: batch and real time. In batch mode, the user's application data may be downloaded from host systems into *portable* terminals, automatically updated, then uploaded back to the host at the end of a work shift. For real-time data collection, speech recognition systems are...
?t s19/3,k/32
>>>Item 32 is not within valid item range for file 256
?t s19/3,k/3

19/3,K/3 (Item 1 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

08345819 SUPPLIER NUMBER: 17826782 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Progressive Grocer Sourcebook '96.(Special Supplement)(Buyers Guide)
Progressive Grocer, v74, n12, pS3(45)
Dec, 1995
DOCUMENT TYPE: Buyers Guide ISSN: 0033-0787 LANGUAGE: English
RECORD TYPE: Fulltext; Abstract
WORD COUNT: 21236 LINE COUNT: 01938

... 800-8001 STATEMENT: Telxon provides a new revolutionary retail information and operational concept, "The Wireless Store." The wireless

store provides the platform for wireless POS, *portable* point-of-sale and real time in-store merchandise management applications. Telxon solutions provide for enhanced customer service, price integrity, improved operational performance and the...

...Group provides consulting services, project management, system integration services and retail solution packages. COMPANY STATEMENT: Telxon Corporation is a leading global manufacturer of wireless and *portable* tele-transaction systems. The company integrates advanced *Portable* TeleTransaction Computers (PTCs) with wireless and network communication technology, a wide array of peripherals and application-specific software for its customers in more than 50...including maintenance, cost of ownership analysis, network integration and business process re-engineering. Applications are available for point-of-sale, imaging, inventory management, merchandising, shelf *management*, etc.

* *POINT* OF SALE SYSTEMS

EPSON

Epson America, Inc. OEM Division 20770 Madrona Avenue Torrance, CA 90509 PHONE: (310) 787-6300 FAX: (310) 782-5350 E-MAIL...

...designed specifically for PC-POS systems, includes slip, receipt, journal printers and multi-functional, high-speed station printers. Epson's line of retail components includes *handheld* computers, large touchscreen LCDs, display units, and the new small footprint IT-U375 and T-U950, which combine a custom IBM compatible Intel 486 PC...

...distribution, authorized VAR programs, national advertising, training, authorized service programs, and access to Epson's complete line of products including all retail printers and peripherals, *handheld* computers, standard and notebook PCs, IC cards, scanners, floppy and optical disk drives, as well as Epson's impact, inkjet and laser printers.

mgv

MGV...or ordering. SPECIALIZATION: Four D, Inc. manufactures the following Small Comforts(R) products: Shop-Along Child Carrier, Shop-Along Infant Carrier, Diaper Changing Table, Diaper *Vending* Machine, Baby Wait Station, *Mobile* Diaper Changing Center, Cabinet Diaper Changing Center, Diaper Waste Receptacles, Changing Pads, Diaper Refill Kits and grocery cart Child Safety Straps. Custom colors available. Four...or ordering. SPECIALIZATION: Four D, Inc., manufactures the following Small Comforts(R) products: Shop-Along Child Carrier, Shop-Along Infant Carrier, Diaper Changing Table, Diaper *Vending* Machine, Baby Wait Station, *Mobile* Diaper Changing Center, Cabinet Diaper Changing Center, Diaper Waste Receptacles, Changing Pads, Diaper Refill Kits and grocery cart Child Safety Straps. Custom colors available. Four...

?t s19/3,k/4

19/3,K/4 (Item 2 from file: 148)

06219806 SUPPLIER NUMBER: 13277508 (USE FORMAT 7 OR 9 FOR FULL TEXT)

U.S. mergers and acquisitions. (The M&A Rosters: First Quarter 1992)

Mergers & Acquisitions, 27, n1, 65(69)
July-August, 1992
ISSN: 0026-0010 LANGUAGE: ENGLISH RECORD TYPE: FULLTEXT
WORD COUNT: 79730 LINE COUNT: 07395

... owns 10 hotels and has six other hotels under management contract. Its Houston-based Diamond M Holding Corp., through subsidiaries, owns and operates 10 major *mobile* offshore oil and gas rigs on a contract basis. Odeco Drilling, the offshore contract drilling unit of Murphy Oil Corp., had approximate sales of $147...With the acquisition of Data-Pro Automated Card Services, FIserv expects product and service capabilities to increase. The acquisition is expected to complement the current *point*-of-sale debit support services provided through its electronic banking services division. Data-Pro Automated Services provides plastic card products and services, including credit and...presently committed to expand its presence in

medical technology and is negotiating to acquire additional companies in this field. Diagnostic Ultrasound is engaged in the *mobile* medical imaging field. It has been operating for six years and has branches in Bradenton and Tampa, Fla. It recently started a neuro technology division ...

...Power & Light Co., Montana Power Co., Idaho Power Co., Sierra Pacific Power Co., and Utah Power & Light Co. Through subsidiaries, it manufactures, sells, and leases *portable* billing systems; markets waste management services; broker's and transports natural gas; provides long-distance telephone services; rents buildings for commercial and industrial use; provides...

...in Spokane, Wash., has subsidiaries located in the U.K., France, Germany, Australia, and Canada. EnScan, a subsidiary of Arkla Inc., is a manufacturer of *mobile* automatic meter reading systems. It manufactures the trademarked AccuRead meter reading system, a radio communications system used to transmit readings from customer meters. Through this... concerns, and others engaged in offshore exploration and drilling for the production of oil, gas, and other minerals. It also provides gas compressors, industrial and *portable* air compressors, dehydrators, coolers, air tools, and other related air equipment, mainly to oil and gas and petrochemical industries. At March 31, 1990, it operated...Enterprises acquired Coltewah-Collegedale Telephone from Fall Inc. for an undisclosed consideration. Principals: Century Telephone Enterprises is a diversified telecommunications company providing local telephone, cellular *mobile* telephone, and radio paging services. It is one of the largest local exchange telephone companies in the U. S. It operates 304,915 access lines ...Lynch, through its Brighton Communications Corp. unit, acquired Bretton Woods Telephone for an undisclosed consideration. Principals: Lynch operates as a common and contract carrier of *mobile* homes, recreational vehicles, and other commodities. It is engaged in the manufacture of glass-forming and automated case-packing machinery, industrial processing equipment, and air...

...more than 200,000 subscribers in Washington state, Idaho, Minnesota, and California. Excluded from the transaction are King Broadcasting's six radio stations and a *mobile* production unit. Upon completion of the transaction, Providence Journal would operate the acquired properties. About 70 percent of King Broadcasting stock is controlled by Priscilla... paging operations. It provides long distance service through connections with other independent telephone companies through AT&T and its former subsidiaries. It operates its cellular *mobile* system through its wholly owned subsidiary, U.S. Cellular Corp., and paging services through American Paging Inc. In addition, it provides engineering, management consulting, telemarketing...

...1983 to acquire all shares of Northern Bell Telephone Co., Pacific Northwest Bell Telephone Inc., and Mountain States Telephone & Telegraph Co., and a cellular advanced *mobile* communications service company. Its US WEST New- Vector Group provides advanced *mobile* communications services using cellular technology in areas of Denver, Colo.; Salt Lake City, Utah; Seattle, Wash.; Phoenix, Ariz.; and Minneapolis and St. Paul, Minn. In...

...1983 to acquire all shares of Northwestern Bell Telephone Co., Pacific Northwest Bell Telephone Inc., and Mountain States Telephone & Telegraph Co., and a cellular advanced *mobile* communications service company. Its US WEST NewVector Group provides advanced *mobile* communications services using cellular technology in areas of Denver, Colo.; Salt Lake City, Utah; Seattle, Wash.; Phoenix, Ariz.; and Minneapolis, and St. Paul, Minn. In... of the following three telephone companies: Northwestern Bell Telephone Co., Pacific Northwest Bell Telephone Inc., and Mountain States Telephone & Telegraph Co.; and a cellular advanced *mobile* communications service company. Its US WEST NewVector Group provides advanced *mobile* communications services using cellular technology in areas of Denver, Colo.; Salt Lake City, Utah; Seattle, Wash.; Phoenix, Ariz.; and

Minneapolis and St. Paul, Minn. In...services to residential and, to a smaller extent, industrial and commerical customers. It is also engaged in the production of consumer products and operates a *portable* toilet business. Acme Pacific Paper Co. is a private firm engaged in the distribution of paper and sanitary maintenance supplies serving the Seattle area. Its...operates retail furniture stores and sells accessories, including bedding, floor coverings, television sets, audio and stereo equipment, and other consumer electronic products, major household and *portable* products, and various other items. Stores are located in West Virginia, Virginia, Florida, Alabama, Mississippi, Georgia, Kentucky, North Carolina, South Carolina, Tennessee, and Ohio. It...has about $20 million in annual revenue. It has seven locations and 400 employees. Effective Date: 3-30-92

52 BUILDING MATERIALS, HARDWARE, GARDEN SUPPLY, *MOBILE* HOME DEALERS
M. A. Bruder & Sons Inc. acq. Paint America Co.
Broomall, PA Dayton, OH

Terms: M. A. Bruder & Sons acquired Paint America for an...subsidiary, provides refreshment and food services, health and education, distributive services, and textile rental and maintenance services. Food and refreshment services include personal food and *vending* services to colleges, universities, businesses, government offices, and public facilities. Services are also available at stadiums, arenas, airports, parks, convention centers, and racetracks. Health care...
?t s19/3,k/5

19/3,K/5 (Item 3 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

04500908 SUPPLIER NUMBER: 08049130 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Third annual 1990 directory of human resources services, products and suppliers. (directory)
Personnel, v67, n1, p41(109)
Jan, 1990
DOCUMENT TYPE: directory ISSN: 0031-5702 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 105313 LINE COUNT: 10071

... 33312; 305-963-3650
Contact: Dr. Dan Cane, Director of
Clinical Services
Food Service

The following companies provide on-premises employee and executive dining services, *vending* services, specialized catering services, and other food-related services.

American Family Day Corp., P.O. Box 1717,
Kennesaw, GA 30144; 404-429-1807/1810
Contact...Partner
Stan Greenhalgh, Partner

MST Software, One Tierra Vista, Laguna Hills,
CA 92653; 714-837-3664
Contact: Patrick Dowd, President
Personnel Master, personnel/human
resources *management* for the PC, meets the
HRIS needs of most firms of any size. 200
plus users worldwide. 50 plus reports. Demo
available.
Patrick Dowd, President...800-323-2178
Contact: Arlene Kendzy
No. of Employees: 55
Health Evaluation Programs, Inc. (HEP)
provides health services for business and
industry with medical instrumentation, *mobile* and
fixed-site testing. HEP will develop a
?t s19/3,k/6

19/3,K/6 (Item 4 from file: 148)

DIALOG(R)File 148:Gale Group Trade & Industry DB
(c)2004 The Gale Group. All rts. reserv.

03900038 SUPPLIER NUMBER: 06967948 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Second Annual Directory of Human Resources Services, Products and Suppliers, January 1989. (directory)
Personnel, v66, n1, pD1(167)
Jan, 1989
DOCUMENT TYPE: directory ISSN: 0031-5702 LANGUAGE: ENGLISH
RECORD TYPE: FULLTEXT; ABSTRACT
WORD COUNT: 155534 LINE COUNT: 14711

... 60068; (312) 698-4848; 800-843-1978
Contact: Betty Mahaffey, Manager,
Marketing Services
No. of Employees: 165
Comprehensive customized services:
Medical utilization review and case
management administered through registered
nurses providing counseling/education for
hospitalizations and surgeries: psychiatric
case management provides utilization
review services, including substance abuse;
claim administration includes complete...is a leader in
the contract food service industry. One of
the largest food service contractors in the
U.S., Service America provides dining and
vending services in 43 States, the District
of Columbia and Canada. We offer a full
spectrum of food service capabilities from
specialized catering and Executive Dining
to Manual cafeterias, full line *vending* and
office refreshment services.
Carr Newcomer, President Insurance The following companies provide health, life, dental, and other types of insurance. American Assn. of Orthodontics, 460...

?s s19 and ((vending or vend) (2n) machine)
26 S19
107756 VENDING
8064 VEND
2512370 MACHINE
37364 (VENDING OR VEND)(2N)MACHINE
S20 8 S19 AND ((VENDING OR VEND) (2N) MACHINE)
?rd
>>>Duplicate detection is not supported for File 348.
>>>Duplicate detection is not supported for File 349.
>>>Duplicate detection is not supported for File 347.

>>>Records from unsupported files will be retained in the RD set.
...completed examining records
S21 8 RD (unique items)
?t s21/3,k/1

21/3,K/1 (Item 1 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)
(c) 2004 ProQuest Info&Learning. All rts. reserv.

01139523 97-88917
Sourcebook '96
Anonymous
Progressive Grocer Sourcebook '96 Supplement PP: Cover-48 Dec 1995
ISSN: 0033-0787 JRNL CODE: PGR
WORD COUNT: 18136

...TEXT: 800-8001

STATEMENT: Telxon provides a new revolutionary retail information and

operational concept, "The Wireless Store." The wireless store provides the platform for wireless POS, *portable* point-of-sale and real time in-store merchandise management applications. Telxon solutions provide for enhanced customer service, price integrity, improved operational performance and the ...

... Group provides consulting services, project management, system integration services and retail solution packages.

COMPANY STATEMENT: Telxon Corporation is a leading global manufacturer of wireless and *portable* tele-transaction systems. The company integrates advanced *Portable* Tele-Transaction Computers (PTCs) with wireless and network communication technology, a wide array of peripherals and application-specific software for its customers in more than...including maintenance, cost of ownership analysis, network integration and business process re-engineering. Applications are available for point-of-sale, imaging, inventory management, merchandising, shelf *management*, etc.

* *POINT* OF SALE SYSTEMS

Epson America, Inc. OEM Division 20770 Madrona Avenue Torrance, CA 90509

PHONE: (310) 787-6300 FAX: (310) 782-5350

E-MAIL: http... designed specifically for PC-POS systems, includes slip, receipt, journal printers and multi-functional, high-speed station printers. Epson's line of retail components includes *handheld* computers, large touchscreen LCDs, display units, and the new small footprint IT-U375 and T-U950, which combine a custom IBM compatible Intel 486 PC...

... distribution, authorized VAR programs, national advertising, training, authorized service programs, and access to Epson's complete line of products including all retail printers and peripherals, *handheld* computers, standard and notebook PCs, IC cards, scanners, floppy and optical disk drives, as well as Epson's impact, inkjet and laser printers.

MGV America...or ordering.

SPECIALIZATION: Four D, Inc. manufactures the following Small Comforts(R) products: Shop-Along Child Carrier, Shop-Along Infant Carrier, Diaper Changing Table, Diaper *Vending* *Machine*, Baby Wait Station, *Mobile* Diaper Changing Center, Cabinet Diaper Changing Center, Diaper Waste Receptacles, Changing Pads, Diaper Refill Kits and grocery cart Child Safety Straps. Custom colors available. Four...or ordering.

SPECIALIZATION: Four D, Inc., manufactures the following Small Comforts(R) products: Shop-Along Child Carrier, Shop-Along Infant Carrier, Diaper Changing Table, Diaper *Vending* *Machine*, Baby Wait Station, *Mobile* Diaper Changing Center, Cabinet Diaper Changing Center, Diaper Waste Receptacles, Changing Pads, Diaper Refill Kits and grocery cart Child Safety Straps. Custom colors available. Four...
?t 21/3,k/2

21/3,K/2 (Item 1 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

08345819 SUPPLIER NUMBER: 17826782 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Progressive Grocer Sourcebook '96.(Special Supplement)(Buyers Guide)
Progressive Grocer, v74, n12, pS3(45)
Dec, 1995
DOCUMENT TYPE: Buyers Guide ISSN: 0033-0787 LANGUAGE: English
RECORD TYPE: Fulltext; Abstract
WORD COUNT: 21236 LINE COUNT: 01938

... 800-8001 STATEMENT: Telxon provides a new revolutionary retail information and operational concept, "The Wireless Store." The wireless

store provides the platform for wireless POS, *portable* point-of-sale and real time in-store merchandise management applications. Telxon solutions provide for enhanced customer service, price integrity, improved operational performance and the...

...Group provides consulting services, project management, system integration services and retail solution packages. COMPANY STATEMENT: Telxon Corporation is a leading global manufacturer of wireless and *portable* tele-transaction systems. The company integrates advanced *Portable* TeleTransaction Computers (PTCs) with wireless and network communication technology, a wide array of peripherals and application-specific software for its customers in more than 50...including maintenance, cost of ownership analysis, network integration and business process re-engineering. Applications are available for point-of-sale, imaging, inventory management, merchandising, shelf *management*, etc.

* *POINT* OF SALE SYSTEMS

EPSON

Epson America, Inc. OEM Division 20770 Madrona Avenue Torrance, CA 90509 PHONE: (310) 787-6300 FAX: (310) 782-5350 E-MAIL...

...designed specifically for PC-POS systems, includes slip, receipt, journal printers and multi-functional, high-speed station printers. Epson's line of retail components includes *handheld* computers, large touchscreen LCDs, display units, and the new small footprint IT-U375 and T-U950, which combine a custom IBM compatible Intel 486 PC...

...distribution, authorized VAR programs, national advertising, training, authorized service programs, and access to Epson's complete line of products including all retail printers and peripherals, *handheld* computers, standard and notebook PCs, IC cards, scanners, floppy and optical disk drives, as well as Epson's impact, inkjet and laser printers.

mgv

MGV...or ordering. SPECIALIZATION: Four D, Inc. manufactures the following Small Comforts(R) products: Shop-Along Child Carrier, Shop-Along Infant Carrier, Diaper Changing Table, Diaper *Vending* *Machine*, Baby Wait Station, *Mobile* Diaper Changing Center, Cabinet Diaper Changing Center, Diaper Waste Receptacles, Changing Pads, Diaper Refill Kits and grocery cart Child Safety Straps. Custom colors available. Four...or ordering. SPECIALIZATION: Four D, Inc., manufactures the following Small Comforts(R) products: Shop-Along Child Carrier, Shop-Along Infant Carrier, Diaper Changing Table, Diaper *Vending* *Machine*, Baby Wait Station, *Mobile* Diaper Changing Center, Cabinet Diaper Changing Center, Diaper Waste Receptacles, Changing Pads, Diaper Refill Kits and grocery cart Child Safety Straps. Custom colors available. Four...

?t s21/3,k/3

21/3,K/3 (Item 1 from file: 349)

00738087 **Image available**

INTEGRATED POINT-OF-SALE AND INTERNET MULTI-APPLICATION SYSTEM AND METHOD OF USE THEREOF

SYSTEME MULTI-APPLICATION INTEGRE POUR POINT DE VENTE ET INTERNET ET PROCEDE D'UTILISATION D'UN TEL SYSTEME

Patent Applicant/Assignee:
CHIP APPLICATION TECHNOLOGIES LIMITED, Level 8, Ballarat House, 68-72 Wentworth Avenue, Surry Hills, NSW 2010, AU, AU (Residence), AU (Nationality), (For all designated states except: US)

Patent Applicant/Inventor:
MAC SMITH David, Chip Application Technologies Limited, Level 8, Ballarat House, 68-72 Wentworth Avenue, Surry Hills, NSW 2010, AU, AU (Residence), AU (Nationality), (Designated only for: US)
GARTON Ben, AU, AU (Residence), AU (Nationality), (Designated only for: US)
WESCOMBE Justin, AU, AU (Residence), AU (Nationality), (Designated only for: US)

Legal Representative:
BALDWIN SHELSTON WATERS, 60 Margaret Street, Sydney, NSW 2000, AU
Patent and Priority Information (Country, Number, Date):
Patent: WO 200051074 A1 20000831 (WO 0051074)
Application: WO 2000AU121 20000222 (PCT/WO AU0000121)
Priority Application: AU 998801 19990222
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 7688

Fulltext Availability:
Detailed Description
Claims

Detailed Description
... one preferred embodiment, the computing means are in the form of any combination of the following: personal computers; personal digital assistants such as palmtop and *handheld* computers; *mobile* phones; or electronic infon-nation kiosks.

According to another aspect of the invention there is provided a method for 1 0 manipulating data on a...carrying device" includes chip bearing devices such as contact smart-cards, contactless smart-cards, dual interface (combi) smart-cards, watches, rings, key nings, implants, keys, *mobile* phones, personal data PCT/AUOO/00121 assistants (*PDA*'s) and "virtual" storage devices such as electronic wallets, online databases, internet cookies and the like.

The preferred embodiment of the present invention allows numerous...each of the terminals 34. Some alternative embodiments of the invention accomplish communication between the host 33 and the terminals 34 by means of a *portable* data carrying device (not shown). The latter forrn of communication is especially suited for ten-ninals 34 located in remote areas where on-line connection may not be feasible, or for example, in an automated *vending* *machine* for which the establishment of an on-line connection would not be financiallv viable.
In another preferred embodiment (not illustrated) the terminal software runs at...capacity to communicate digital
inforination via an internet server 77, for example, electronic information klosks 78 or personal digital assistants 79 such as palmtop and *handheld* computers, can be used in the preferred embodiment as an interface to the internet.

As explained above, the standard (non-internet capable) system 30 illustrated...host 72, which is privy to transactions carried out on both the POS terminals 74, and via the interriet, provides the merchant with a single *point* of *management*. This allows the merchant to manage and analyse both intemet and POS transactions in an integrated fashion.

Although the invention has been described with reference...

Claim
... according to claim I wherein the computing means are in the form of any one or more of the following: personal computers; personal digital assistants; *mobile* phones; or electronic inforination kiosks.

3 A method for manipulating data on a plurality of data carrying devices according to claim I or 2 wherein...

?t s21/3,k/4

21/3,K/4 (Item 2 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

00731165 **Image available**

METHOD AND APPARATUS FOR REMOTE TELEPHONY SWITCH CONTROL

PROCEDE ET APPAREIL POUR COMMANDE DE COMMUTATION TELEPHONIQUE A DISTANCE

Patent Applicant/Assignee:
AERIS COMMUNICATIONS INC, 1245 S. Winchester Boulevard, Suite 201, San Jose, CA 95128, US, US (Residence), US (Nationality)

Inventor(s):
LADUE Christophe Karl, 912 Third Street, Santa Cruz, CA 95060, US

Legal Representative:
CALDWELL Gregory D, Blakely, Sokoloff, Taylor & Zafman, 7th floor, 12400 Wilshire Boulevard, Los Angeles, CA 90025-1026, US

Patent and Priority Information (Country, Number, Date):
Patent: WO 200044152 A1 20000727 (WO 0044152)
Application: WO 2000US1330 20000119 (PCT/WO US0001330)
Priority Application: US 99234612 19990120

Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM

Publication Language: English
Filing Language: English
Fulltext Word Count: 24362

Fulltext Availability:
Detailed Description
Claims

French Abstract
...qu'une commande specifique d'une application qui est envoyee d'un ordinateur central a une station (213) eloignee via un reseau (102) de radiotelephone *mobile* cellulaire.

Detailed Description
... reserves all rights to the copyright whatsoever.

BACKGROUND OF THE INVENTION
Field of the Invention
The present invention relates wireless Cellular, Personal Communications Systems (PCS), *Mobile* Satellite, and Low Earth Orbit (LEO), Medium Earth Orbit (MEO), High Earth Orbit (HEO), Ellipsoid Satellites, and Geosynchronous Satellite networks. Specifically the invention relates to ...

...invention manipulates these various functions of MAP and TP for the purpose of maximizing switch, BSC and satellite station network bandwidth. The invention enables forward *mobile* and stationary communication terminal paging, *mobile* terminal velocity tracking, optimum base site management, and other important maintenance and testing functions, controlled from a remote location.

Description of Related Art
There are...

...invention provides for base site identification number retrieval, specific radio control channel forward pages, multi-gang telemetry unit pages, application specific command pages, anti-fraud *mobile* unit velocity tracking, *mobile* unit location approximation, specialized caller I.D. messages, and other such data event actions. Furthermore, the invention can cause specific forward analog and digital control and signaling channels to page *mobile* units and stationary that are operating in specific base site areas. Single base sites, base site groups, and entire cellular and PCS networks can be used to page a specific *mobile* or stationary communications unit or multiple units. The invention provides these flexible means and methods while simultaneously minimizing host network bandwidth usage. The invention also...

...operational standard. In addition, the invention provides specialized TCP/IP internet formatted packets that contain the same command set information. These unique packets also contain *mobile* identification numbers (MIN) that are used for the forward paging actions, and other host network command sets that cause specific heretofore mentioned actions to be...

...the purposes of the invention as embodied and broadly described herein, a means and method of providing SS7 based, and Internet based primary and secondary *mobile* identification numbers (MIN) for forward analog, and digital control channel forward pages. Manipulated forward messaging channel data characters in the form of dual tone multiple...
...and data channel messages cause specialized trigger events to occur in application specific, wireless data communications devices. The communications devices are configured as stationary and *mobile* telemetry, application specific wireless data communicators. The application specific data communicators are specially designed to support such applications as: electrical and gas meter reading, security system status reporting, fire protection system status reporting, *vending* *machine* status reporting, mail drop box status reporting, motor vehicle tracking and location monitoring, automobile anti-theft and recovery, and many other related wireless data applications...

...Transaction Capability Application Part (TCAP) protocols. These SS7 based TCAP protocols are controlled by a centralized IS-41 A, B and C compatible Service Control *Point* (SCP) data *management* hub facility, that operates within the network architecture of conventional public and private IS-41 based SS7 networks. These networks are provided to maintain complete connectivity between cellular, PCS and *mobile* satellite *mobile* switching centers (MSC) and satellite network ground control stations. Each designated MMI terminal contains a special internal or external modem or PCM/CIA or dialogic...

...Maintenance Position mode. This mode supports forward control channel paging, and/or forward messaging to be sent to a single designated or multiple set of *mobile* or stationary application specific data communicators. In addition, the Maintenance Position terminal is connected to a wireline or wireless telephony switch maintenance port, and interacts...

...existing data structures contained within; to cause an enabling of new Maintenance Position instruction sets. These instruction sets are transmitted from a specialized Service Control *Point* (SCP) data *management* hub to a designated MMI terminal that is an IS-41 SS7 node that has its own global, cluster and node based; originating point code ...

...to a designated Visitor Location Register (VLR) that is an associated network element with the currently serving MSC(s).

Contained with this packet is a *mobile* identification number (MIN) and a *Mobile* Serial Number (MSN) and other data information, that is part

of a comprehensive user roamer profile. Once the VLR receives the profile, it changes its...

...one MSN. This method creates a new use for forward pages, and in no way inhibits or causes any algorithmic conflict with normal stationary or *mobile* application specific communicator authentication. Once the VLR profile is updated the invention prepares another modified Qualification Directive data packet. This packet is sent to a...

...and Maintenance Position-multitasking software. Contained within this particular modified Qualification Direction are program instructions, and specific forward paging information such as the 10 character *mobile* identification number (MIN), and the eight character *Mobile* Serial Number (MSN). Once the MMI terminal receives the manipulated Qualification Directive, the MMI initializes its specialized Maintenance Position program, and causes the contained MIN to be forwarded from the MMI to the host wireless telephony switch to page a group or a single stationary or *mobile* application specific data communicator. This is accomplished without causing a public switched telephone network (PSTN) voice call pathway to be established, or other host network...

...the invention to utilize IS-41 Registration Notification invokes and Registration Cancellation invokes in order to facilitate a unique means and method of utilizing multiple *mobile* identification numbers (MIN) with one application specific wireless communications device. This specially configured application specific device operates in a conventional cellular, PCS or *mobile* satellite wireless network. These networks are interconnected via the PSTN and public and private SS7 networks. The invention provides for an innovative integrated usage of PSTN network infrastructure, SS7 network infrastructure and cellular, PCS and *mobile* satellite switching platforms. The invention combines various conventional processes and procedures that enable the means and methods of delivering application specific commands and instructions to wireless devices operating in cellular, PCS and *mobile* satellite networks. For example the invention manipulates temporary location directory numbers (TLDN) in a unique way.

In conventional cellular networks a roaming *mobile* is assigned a TLDN when it accesses the currently serving cellular network. The TLDN is assigned to a roaming user, and entered into a user...

...structures. The TLDN is usually comprised with a local network assigned area code, and office code. When a roaming cellular user receives a land-to-*mobile* call the TLDN is used by the local telephone service provider to 'dial' the roaming *mobile* user. When the TLDN is received by the currently serving cellular network, its associated VLR causes the associated MSC to page the *mobile* with its permanently assigned MIN over the analog FOCC forward control channel. In the case of the invention's application specific communicator, the MIN is...

...an innovative means and method of delivering forward pages and forward messages to wireless application specific communicators that are operating in a cellular, PCS or *mobile* satellite network without incurring PSTN or wireless network airtime charges. The invention creates a completely secure means of delivering forward messaging, since the 100-199...

...algorithms are manipulated for the purpose of enabling message/page call delivery (MPCD) to a wireless communicator without incurring currently serving PSTN, cellular, PCS and *mobile* satellite wireline and wireless network call duration charges. The invention's MPCD messaging method operates within all known national and international wireline and wireless telephony...

...PCM/CIA based. These cards are ported to the world wide web (WWW). The specialized SCP-HUB also enables remote command and control of host *mobile* switching center (NSC) switches via the intemet.

It is an object of the invention to provide innovative application specific communicator velocity tracking via unique creation...

...The use of 100 to 199 NPAs uniquely enables this preferred embodiment. This scheme can also be used for accessing C block PCS carriers, and *mobile* satellite carriers.

The inventions wireless application specific communicator software and firmware means are specially configured to detect 'access allowed' or 'access denied' by monitoring specific...voice channel is seized for over two seconds. This factor indicates to the communicator that it must attempt access with another cellular, or PCS, or *mobile* satellite network.

Another important object of the invention is to provide forward messaging in a cellular, PCS or *mobile* satellite via digital caller identification messaging (CID). The invention provides the means and method of sending a page message in the form of caller I...

...that recognizes this CID message. The message contains specialized instruction commands. These commands are structured to emulate a ten digit directory phone number or a *mobile* identification number (MIN). Upon the reception of this number, the communicator activates its specialized software to modify operations of a connected device, and/or prepare...

...message to be transmitted to the SCP-HUB. The application specific communicator transmits this status response message to the associated cellular, PCS base site, or *mobile* satellite. This status response message can be formatted for caller I.D./PSTN access or SS7 network access.

When the cellular or PCS base site or space-bome satellite receives the status message it relays it to the associated *mobile* switching center (MSC) or satellite network ground station (GS). When the MSC or GS receives the message, its translation databases analyze the data, and then...

...communicators. The application specific communicator can also transmit application specific status response messages to the inventions SCP-HUB by a currently serving cellular, PCS or *mobile* satellite network wireline and wireless infrastructure. The application specific communicator requests conventional remote feature access control or other related call services, and transmits the specially...

...and forwards it to the SCPHUB via caller I.D./PSTN network elements or the associated SS7 network elements.
The currently serving cellular, PCS or *mobile* satellite network receives the call message on the RECC control channel or other means. It then sets up a call to the designated PSTN node...

...line long distance charges, or cellular air time charges. The inventions modified and manipulated caller I.D. data operates bidirectionally via PSTN, cellular, PCS and *mobile* satellite networks without incurring any network air time or landline costs.

Another object of the invention provides for using extended protocols provided under the guidelines...

...The invention also provides for a unique usage of autonomous registration increment specified in Interim Standard 553. IS-553 is a specification that encompasses cellular *mobile* radio operations and cellular base site operations for the analog American *Mobile* Phone System (AMPS). In one scenario the invention provides the means and method of creating a message/page call delivery event (MPCD). A conventional *mobile* cellular radio is assigned and will recognize no more than two *mobile* identification numbers (MIN). When a conventional *mobile* cellular radio operates in a given cellular market or

operational area, it never utilizes more than one MIN number. The invention provides the means and...system network elements, according to the invention.

Fig. 5 is a block schematic of the preferred embodiment of the RTSC system interacting with multiple cellular *Mobile* Switching Centers, according to the invention.

Fig. 6 is a block schematic of the RTSC protocol flow from the SCP-HUB to other RTSC network...

...16, depicts Caller I.D. manipulated word formats, parameter types and message types according to the invention.

Fig. 17, depicts a manipulated IS-553 AMPS *mobile* radio to base site access, according to the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS
OF THE INVENTION
Reference will now be made in detail...a uniquely modified SS7 IS-41 compatible SCP-HUB, a modified MMI Maintenance Position computer terminal, which is co-located at a cellular, and, PCS *mobile* switching center (MSC), or multi MSC cellular carrier network management center. The MMI ten-ninal is connected to switch fabric via a maintenance port or ...

...register (VLR) via a switch fabric data link. This action causes a standard user profile to be modified by replacing the currently listed 10 digit *mobile* identification number (MIN) with up to 20 additional MINs, inserted one-ata-time. This action is accomplished while maintaining consistent listings of the same eightcharacter *Mobile* Serial Number (MSN), also known as an Electronic Serial Number (ESN).

Secondly, the RTSC system commands the SCP-HUB to send an additional SS7 SCP-HUB Qualification Directive data packet to the associated MMI Maintenance Position computer terminal. Contained within this Qualification Directive data packet a specialized 10 digit *Mobile* Identification Number (MIN), and the normally assigned MSN.

The MMI is connected to an MSCs or host network management center maintenance port or test port...

...set of communicators simultaneously. In this way the RTSC system can cause up to twenty different MIN pages to be sent to a stationary or *mobile* application specific communicator. These page messages or MPCDs can be primarily formatted in conventional BCH block code d ata, or be configured for dispersal in...

...specific communicator controls such as specific access assignment to cellular and PCS carrier's whose operational footprints overlap one another. This controls which network the *mobile* application specific communicators status response packet is allowed to access, such as the A side cellular carrier, or B side cellular carrier, or PCS C-block, or *mobile* satellite carrier operating in a given metropolitan statistical or service area (MSA) that covers a specific city or region.

Referring to Fig. 1, the Remote...

...serving VLR entries. The term 'user' in the context of the RTSC system simply relates to whether the particular application-specific data communicator is a *mobile* unit, or a stationary unit. These units are not typically manned. Additionally, the user information stored in the DLR and other subsystem data-bases will indicate what type of application specific communicator is involved; electrical meter reading, motor vehicle fleet management, *vending* *machine* status reporting and many others. Once the DLR interrogation is complete, the NMS subsystem creates a two-packet forward page-trigger-status response event 55...41/SS7

Qualification Directive, Registration Notification, or Registration Cancellation is prepared 57.

Referring to Fig. 8, depicts a IS-41 based SS7 network signaling system *Mobile* Application Part-Transaction Capability Application Part (MAP-TCAP) Qualification Directive packet 121. This packet can also be configured as a Registration Notification or Registration Cancellation...

...networks that adhere to IS-41, A, B and C standards. Additionally, a derivative of this packet 121 is used by the Global System for *Mobile* (GSM) signaling network data links.

Therefore, The RTSC Qualification Directive that is specially modified for the purpose of enabling specialized forward pages and specialized VLR entries that will work seamlessly *Mobile* Serial Number (MSN) 122. Other conventional information includes System Type codes, Qualification information codes and other types 123, and 136. Some codes are mandatory and...

...page trigger event packet, commensurate with the host cellular, or PCS switch-fabric data communications standard, that is utilized by the currently serving switch platform. *Mobile* satellite ground station switch standards are also considered in accord with the present invention. *Mobile* satellite systems include but are not limited to, the Microsoft Teledesic LEO system, The 66 satellite Iridium Leo system, Inniarsat A, B, M, and P formats are compatible with the invention. The American *Mobile* Satellite Communications (AMSC) net work for LEO and Geosynchronous systems is also compatible with the invention. The invention will work seamlessly in these aforementioned satellite networks. Therefore, satellite based application specific data *mobile* and stationary telemetry communicators can receive forward page-trigger event packets in the same means and method as cellular and PCS *mobile* and stationary communicators.

Referring to Fig. 1, once the IS-41/SS7 Qualification Directive for VLR user profile entry/update is prepared 57, and the...

...network data link 59. This specific action clears the previous VLR user profile entry. A typical VLR user profile entry is made when a roaming *mobile* registered in its associated currently service MSC. Since all *mobile* or stationary application specific communicators are deemed 4roamers,' manipulation of user profiles of the VLR is critical. When the *mobile* or stationary application specific communicator registers, or transmits a status response data packet event, the currently serving MSC, analyses it received MIN and determines that...

...data.

Another important feature of the invention combines SS7 network manipulation, VLR service profile manipulation, and specialized PSTN MPCD manipulation. In some cellular, PCS or *mobile* satellite networks usage of a modified MM1 MAP terminal is not required.

The invention uniquely combines SS7 network, PSTN, and SS7 node in integrated manipulation scheme, that in fact, creates an additional application specific network overlay for forward page and communicator message delivery for cellular, PCS and *mobile* satellite networks. This unique manipulation scheme enables multiple MIN authentication; via SS7 and IS-41 automatic roaming procedures. By manipulating these aforementioned features, further manipulation...

...Cellular networks experience thousands of incomplete calls. The invention uses incomplete calls to enable MPCD procedures, and to produce additional revenue for cellular, PCS and *mobile* satellite carriers without the need to add equipment, software or other infrastructure elements to these existing networks. In addition the inventions MPCD procedure creates an...

...a MIN message. These six protocol levels that interrelate and communicate with one another operate within the parameters of conventional PSTN, SS7, cellular, PCS and *mobile* satellite networks, comprise the inventions core MPCD system protocol. The MPCD protocol system is in fact a sub protocol that further supports, and reduces to ...flexibility enables a new list of application specific wireless-data-services.

The DLR is also configured to add a date and time code 'stamp' each *mobile* application part/ transaction capability application part, (MAP/TCAP) packet arrives from a VLR, HLR, SSP-switch, MSC or any other SS7 node. Every time a...

...to detect, receive and analyze caller I.D. formatted messages (CID) 172, as depicted in Fig. 4. These CID messages 172 were originally designated for *mobile* cellular radios that support the reception and transmission of control data via analog control channels, and voice services on analog voice channels, and CDMA and...

...such as command invokes and other information designated for forward transmission to communicators that are integrated to such devices as a GPS receivers, power meters, *vending* machines or other such apparatus. This particular base site for example, is configured to provide IS-136 TDMA digital traffic channel services, in addition to...processing structures of the DLR and the comparative data base/ stack, is user profile information that consists of; the communicators assigned 20 MIN numbers, and *Mobile* Serial Number (MSN), a temporary location directory number (TLDN) that is an associated 10 digit directory number. This associated 10 digit directory number is configured...

...registration data structure. This structure is the autonomous registration packet so specified in IS-553, the standard that encompasses the AMPS cellular base site and *mobile* radio operating protocols.

After the radio transmits its autonomous registration packet to the associated base site of the currently serving cellular system, certain user authentication...

...TLDN to the 'roamers' user profile database and forwards the TLDN information to the 'home' systems associated HLR.

When a local home area land-to-*mobile* caller dials the cellular radio users MIN, the associated land telephone network (LTN) sends the call request to the local cellular MSC that is associated...

...sets up a switch route pattern to the currently serving base site and invokes a forward page via an associated base FOCC control channel. The *mobile* cellular radio responds to the page with a ring tone, and the user picks up the radio handset, presses the send button, therefore completing the land-to-*mobile* call procedure.

The present invention completely manipulates the aforementioned call procedure in such as way that a new forward messaging system becomes enabled and created...that MIN and MSN combination that is presently active, is different than the first MIN and MSN number contained in the MPCD page request. The *mobile* subscriber number (MSN) also known as an Electronic Serial Number (ESN) is listed in the user profile, and is an essential information element used for...serving base site receives forward page data-packet from the associated MSC switch 66. The base site subsequently transmits a forward page to a designated *mobile* or stationary communicator via a designated air interface data link 67. In fact the inventions RTSC MMI MAP system ...and method. After reception of the forward page, the application specific communicator analyses the MIN and responds appropriately to its internal program structures 68. The *mobile* or stationary application specific communicator then prepares an appropriate status response data packet 69. Next, the communicator

transmits status response data packet via an analog site identification and *mobile* communicator velocity tracking, specialized switch bandwidth management, and specific forward base site channel management, that enable designated forward channel pages. Other specialized functions include custom...

...connected to the ASP via the internet worldwide web (WWW) II 0.

Referring to Fig. 4, it depicts a cellular, and/or PCS and a *mobile* satellite network.

The SCP-HUB 106 is interconnected to an MMI MAP terminal 114d, via its associated STP 109c, and an SS7 data link 115...firmware and software means that enables data communications between cellular or PCS networks analog, digital control, and signaling air interface channels. The communicator also uses *mobile* satellite network space segment control, authentication side bands and signaling channels. The invention operates in the depicted satellite network in the same manner that it...

...actions. All of these aforementioned modifications can be enabled without circumventing any conventional host network operating standards.

Other important features of the invention include tracking *mobile* application specific communicators in a cellular and PCS host network environment. This is enabled by identifying the particular base site that is serving a particular...

...SS7 data link.

Referring to Fig. 4, there is depicted the inventions SCP-HUB 106, its specialized switch 108 and other associated network elements. Three *mobile* application specific communicators 100a, 100b, and 100c are operating in a designated cellular network. There are multiple base sites 128, 129, 130, 131, 132 and...and BSC with specifically assigned T-carriers, port numbers and other details. Therefore this information can be used to establish a general location of the *mobile* application specific communicator. This information is used for anti-fraud purposes and emergency 91 1 services.

In some cases an application specific communicator is combined...

...general location using the inventions means and methods will sufficiently surfice
Referring to Fig. 4, the inventions anti fraud feature is unique. For example one *mobile* communicator 100b has its own MIN and MSN. It transmits its REGNOT packets and application specific data packets. Each of these packets always contains the MIN and MSN information. If for example, the *mobile* communicator 100c is a cloned communicator. This communicator is operating illegally with a duplicate MIN and MSN that matches the authorized *mobile* communicator 100b. If the base site 130, where the cloned *mobile* communicator 100c is located twenty miles down range from base site 129, where *mobile* communicator 100b is operating the invention detects and reports the disparity. Both communicators have the same MIN/MSN combination. The inventions DLR 162 has specialized...

...in the application specific user profile record every time a packet passes through its internal data processing structures.

The network management subsystem 105 maintains a *mobile* application specific system
MAP terminal 114b sends both the authorized *mobile* communicator 100b and the cloned communicator 100c information back to the SCP-HUB via the modified IS4I/SS7 Qualification Request ...MSN and ESN appears at a base site twenty miles down range. The Network Management Subsystem 105 detects the disparity and automatically shuts down both *mobile* application specific communicators.

SCP-HUB personnel notify the host carrier, the associated application service provider (ASP) and contact law enforcement authorities.

Referring to Fig. 9...

...8. The empty data fields 124, 125 and 126 can be used to send the aforementioned billing statistics to the SCPHUB for, processing and determining *mobile* communicator positioning and tracking. The MMI MAP terminal reads this information from various switch elements that manage and control these billing statistics. This information is...

...IS-41 SS7, TCP/IP or ATM protocols and relayed back to the SCP-HUB.

The invention also provides for the control and management of *mobile* applicationspecific communicators that are operating in multiple cellular network operational areas. This is especially valuable where one cellular or PCS footprint overlaps on another. This...

...overhead data stream of the forward control channels. This overhead denial parameter causes the application specific communicator to automatically switch to another cellular, PCS or *mobile* satellite network on a preferred basis without any further intervention from the SCP-HLJB.

Referring to Fig. 12, depicted here is a status response data...

...MIN enables application specific unique application specific communicator operations. These unique operations are enabled when an access is attempted in any given cellular, PCS or *mobile* satellite host network.

Referring to Fig. 12, the C word 148 of the REGNOT part 143 contains the eight character *Mobile* Serial Number (MSN) 158 and used along with the MIN to identify and authenticate application specific communicators. This MSN is used by MSCs, and VLRs...

...words contain such application information 159 as Global Positioning System (GPS) longitude and latitude information. The data word can also include electrical meter status information, *vending* *machine* status and inventory information, and many other type of application specific information. This part of the packet is sent when an application specific communicator transmits...element that is co-located with the specialized application specific SCP-HUB 106. The DLR 162, checks its own user profile data base, examines the *mobile* serial number (MSN) contained in the C word 148 that is shown in Fig. 12, and determines that this particular Registration Notification packet with its...

...detects a special command MIN originally sent from the SCP-HUB 106, its associated the MMI MAP terminal 114b, and its associated cellular, PCS or *mobile* satellite network. The DLR 162 maintains the aforementioned user profile that has currently serving host network location information. This unique forward paging feature causes application...

...trigger a selection between A, or B, or C block cellular or PCS carriers.

These same algorithms can cause the communicator to also select a *mobile* satellite network for service when appropriate.

Referring to Fig. 5, the invention can ...and its associated VLR 135c, and MMI MAP terminal 114c are configured for IS While the Dallas PCS network is configured for Global System for *Mobile* (GSM) time division multiple access (TDMA) digital cellular services. Each cellular or PCS operating area is joined by an SS7 network, and the inventions MMI...

...data information that is transmitted over the air interface of forward and reverse analog and digital control channels that are used in

cellular, PCS and *mobile* satellite networks. The invention also provides for manipulation of caller I.D. information over the air interface of forward and reverse analog and digital voice or traffic channels that are used in cellular, PCS and *mobile* satellite networks. The invention also provides for the manipulation of caller I.D. data over PSTN trunks that are linked to modified premise equipment (MPE...

...of status reporting event. The communicator therefore enables the means and method of becoming modified terminal equipment (MTE).

The invention further manipulates cellular, PCS and *mobile* satellite 'call statistics' in a unique and innovative manner. Specifically, the invention manipulates 'incomplete calls' during the forward MPCD data message delivery, and 'drop calls...

...associated base site and finally to the modified terminal equipment (MTE) integrated within the ci rcuitry structure of the application specific communicator. When a conventional *mobile* radio is being paged, the associated MSC and base site has previously assigned a forward and reverse voice channel to that radio. When the user...name' message can contain such data as global positioning system (GPS) longitude and latitude location information, electoral power meter readout bits, motor vehicle status bits, *vending* *machine* inventory status, security system status reporting bits and other such information. However since the MPE 212 did not 'pick up' the call before going off...uses the 'on-hook' status of wireless and wireline terminal equipment in order that the RTSC system and service does not incur cellular, PCS or *mobile* satellite air time charges.

In addition, the invention uses the 'on-hook' status of the terminal equipment insures that there are no PSTN long distance...

...addition to the data only services. Therefore MDMF caller I.D. messages can be sent the inventions communicators that support circuit switched cellular, PCS or *mobile* satellite voice services.

Referring to Fig. 2, the invention provides a complete bi-directional application specific data service that requires no additional infrastructure elements, or...

...any wireless and wireline network that supports conventional caller I.D. services. The invention can deliver manipulated caller I.D. data via cellular, PCS and *mobile* satellite analog and digital control channels, and analog and digital traffic channels. All of this data is managed by the inventions SCP-HUB 106. The...

...configured for IS-95 CDMA 197 services, or IS-136 TDMA 196 services. The inventions manipulated caller I.D.

RTSC system, fully supports application specific *mobile* satellite services via a satellite 107, a satellite compatible communicator 100a, and its associated ground station (GS) 104.

Another important aspect of the invention is...unique manipulation of the voice channel assignment task. As a result of this innovative manipulation, the application specific communicator never occupies a cellular, PCS or *mobile* satellite voice channel.

Referring to Fig. 17, The invention's communicator 100 transmits a Modified Remote Feature Access Control packet (MRFAC) 157 to the currently...

...specific communicator 100. Contained within this message is an Initial Voice Channel Designation Message (IVCDM) 220 as specified by certain IS-553 AMPS land-to-*mobile* and *mobile*-to-land intercommunications standards 228 section 3.

The communicator 100 and its firmware 218 respond to the reception of the IVCDM 220 with...

...to the IVCDM 220 with a designed voice or traffic channel mismatch (VCHM) 229. This VCHM acts in the same way as if a conventional *mobile* station that is set to a preferred system such as the A side, and tries to access and match a voice channel on the B...

...any way. Furthermore, this action occurs entirely within the confines of internal firmware and software structures and in no way effects the cellular, PCS or *mobile* satellite that is serving the application specific communicator. The invention manipulates the standard within its structures, however the cellular system that serves the communicator is ...
...228 and within the radio itself 218.

The SSD task 224 is initialized only if the radio wants to access another serving cellular, PCS ort *mobile* satellite system. If not, as in this case, the radio goes to standby or 'idle task' 225 as specified in IS-553 228. In this...

Claim
I A method of communicating a command from a central host to a remote station via a
cellular *mobile* radio network, comprising:
a) sending the command from the central host to a network switch, the command comprising a *mobile* identification number (MIN) and an electronic serial number (ESN); b) querying a database associated with the network switch to locate the remote
station, the query...

...remote station to the database associated with
the network switch, the report specifying the MIN and ESN;
2) reporting to a database associated with a *mobile* switching center (MSC) serving a remote station identified by the ESN that the remote station is no longer
being served by the MSC, the report...

...the MIN and
ESN.

9 The method of claim 1, wherein sending the command from the host to a network switch, the command comprising a *mobile* identification number (MIN) and electronic serial number (ESN), comprises sending the command from the host to a network switch via a public switched telephone network ...Association Interim Standard 41 (TIA/EIA IS-4 1).

19 A method of communicating commands from a central host to remote stations via a
cellular *mobile* radio network, comprising:
a) sending a command from the central host to a network switch, the command
comprising a profile, wherein the profile sets forth call capabilities;
b) querying a database associated with the network switch to identify a remote station in the cellular *mobile* radio network having call capabilities matching the profile; C) if the database associated with the network switch does not identify a remote
station having call...

...that match the profile, then:
1) reporting the profile to the database associated with the network switch; 2) reporting to a database associated with a *mobile* switching center (MSC) serving a remote station whose call capabilities match selected call capabilities set forth in the profile that the remote station is no...

...QuolDir Creates Appropriate Sends Page to BS Page From Des

Page Invoke. Page Protocol. Through SW Fabric. SW/MSC. Sto,
68-) 69) 70-) 71
F
Mobile or Stationary *Mobile* or Stationary *Mobile* or Stationary
erving I
am. Responds to am. Prepares Corn. Transmits Statu Status
eceived Page. totus Respon Response Pocket. Pocket.
1 72-) 73-) 74.) 75...
?t s21/3,k/5

21/3,K/5 (Item 3 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00542297 **Image available**
UNIVERSAL INTERACTIVE ADVERTISING AND PAYMENT SYSTEM FOR PUBLIC ACCESS ELECTRONIC COMMERCE AND BUSINESS RELATED PRODUCTS AND SERVICES
SYSTEME DE PAIEMENT ET DE PUBLICITE INTERACTIF UNIVERSEL POUR COMMERCE ELECTRONIQUE A ACCES PUBLIC, ET SERVICES ET PRODUITS D'AFFAIRES ASSOCIES
Patent Applicant/Assignee:
USA TECHNOLOGIES INC,
Inventor(s):
KOLLS H Brock,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200005670 A1 20000203 (WO 0005670)
Application: WO 99US8577 19990419 (PCT/WO US9908577)
Priority Application: US 9893475 19980720; US 99293358 19990416; US 99293129 19990416
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 23396

Fulltext Availability:
Detailed Description
Claims

English Abstract
The present invention relates to a universal advertising and payment system for networking, monitoring and controlling electronic commerce and *vending* equipment. The system can effectuate electronic commerce and interactive advertising at the point of sale. *Vending* equipment includes copiers, phones, facsimile machines, printers, data-ports, laptop print stations, notebook computers, palmtop computers (PALM PILOT), microfiche devices, projectors, scanners, cameras, modems, communication access, personal computers (PC), PC terminals (NET PC), and network computers (NC). *Vending* equipment can be networked to each other through a first network, programmable and accessible by a PC, server, point of sale (POS) system, property or...
...information system (PMS/MIS), and networked to a second network. The first network and second network can be the same network. Complete control of a *vending* *machine*'s functionality including usage, control, diagnostics, inventory, and marketing data capture can be effectuated locally or by remote connection to the network. Remote connection to...

...and other wire and wireless transmission. The present invention allows a user to obtain authorization for use, pay for products and services, and configure the *vending* equipment with a smart card, or magnetic card

(card). Magnetic cards include smart card, credit card, debit card, pre-paid, automated teller machine (ATM) or...

French Abstract
...L'equipement de vente comprend des copieurs, des telephones, des machines de telecopie, des imprimantes, des bus de donnees, des stations d'impression pour ordinateur *portable*, des ordinateurs portables, des ordinateurs de poche (PALM PILOT), des dispositifs de microfiches, des projecteurs, des scanners, des appareils de photographie, des modems, des acces...

Detailed Description
... a universal advertising and payment system for networking, monitoring, collecting data, selling goods and services, controlling interactive advertising, controlling and effectuating electronic commerce and controlling *vending* equipment.

The present invention also relates to physical and virtual networking of *vending* machines and network hardware, server based network control, and network security. The present invention can be implemented in a manner to allow operational monitoring and control of networks (and network hardware), *vending* machines, electronic commerce, payment for goods and services, and advertising worldwide.

BACKGROUND OF THE INVENTION
Today, business centers have begun to emerge in hotel lobbies...

...ATM") or other bank or private issued card. Coin-cashcard systems are well known for copiers, however, for faxing, PC's, and other types of *vending* equipment and services, reliance on these types of systems alone can be awkward and in certain situations impractical. As a result, certain services such as...a lack of security/safety to equipment and money accumulating in coin boxes.

Furthermore, inadequate payment systems can result in reduced profits, limited functionality of *vending* products and services. Cash and coin systems can increase reliance on service attendants required to collect money from the coin boxes.

Deficiencies and shortcomings that...

...method for a universal control and payment system to distribute and display interactive advertising, conduct electronic commerce, and control the billing for the use of *vending* equipment. *Vending* I 0 equipment can include copiers, phones, facsimile machines, printers, data-ports, laptop print stations, notebook computers, palmtop computers (PALM PILOT), microfiche devices, projectors, scanners...

...desk routine 1200 flowchart.

Figure 15 shows an advertising routine 1300 flowchart.

Figure 16 shows a printing routine 1400 flowchart.
Figure 17 shows a POST-*VEND* transaction processing routine 1500 flowchart.

1 5 Figure 18 shows an error detection routine 1600 flowchart.

DETAILED DESCRIPTION OF THE INVENTION
Figure 1 shows an overview of the universal interactive advertising and payment system for *vending* of public access electronic commerce and business related products and services.

The universal interactive advertising and payment system is a computer program which may reside in a carrier, such as a disk, diskette or a modulated carrier wave.

A *vending* *machine* is defined as any piece of equipment in which products and/or services can be rendered therefrom. Referring again to Figure 1, control of a *vending* *machine* (referred to as *VENDING* *MACHINE* USAGE) can involve a first step of denying usage, access, service, or products from the *vending* *machine* as shown in step 10. Next, in step 20 the system accepts user input (data and/or monetary, disclosed herein as PRE-*VEND* TRANSACTION DATA (i.e. "AUTHORIZATION")), and then in step 30, the system authenticates or verifies the user's input to determine if *VENDING* *MACHINE* USAGE is "authorized." If, in step 40, *VENDING* *MACHINE* USAGE is "authorized" the processing proceeds to step 50. In step 50, the system effectuates the delivery, monitoring, and dispensing of the product, and/or service.

Then, in step 60, the system processes the POST-*VEND* TRANSACTION DATA to effectuate user (customer) billing, and account maintenance. Lastly, in step 70, the system "settles" (effectuates the transfer of funds, i.e. payment) the POST-*VEND* TRANSACTION DATA.

Step 70 can be optional when a PRE-*VEND* TRANSACTION can both satisfy the
requirements of step 40, "authorization" and step 70, "settling." Examples of when Step 70 may not be required, can include *vending* of a product or service when at the time of creating the PRE-*VEND* TRANSACTION DATA (i.e. the "authorization") the exact amount of the total sale is known. Other examples of when step 70 may not be required can include creating PRE-*VEND* TRANSACTION DATA (i.e. the "authorization") where no bill for the product or service will be incurred by the user (customer) (i.e. products and/or services for a particular user are "free").
One example of a *vending* *machine* is shown in Figure 2, a personal computer system, known as a system 100. The arrangement on table 129 is comprised of a PC 102...

...3D show an exemplary embodiment for the present invention, an unattended business center in which product and services can be vended. The control of a *vending* *machine* can include monitoring and accounting for products and services rendered from the *vending* *machine*. *Vending* machines can include copiers such as copiers 602A-602F, phone data-port combinations such as phone 648, facsimile machines such as fax 604A-604B, and printers such as printer 104 and printer 69A-612G. Other types of *vending* machines can include, laptop/palm computer print stations such as laptop print station 646, microfiche devices (not shown), projection equipment (not shown), scanners (not shown...

...shown).

Additionally, peripherals such as personal computers (PC) 102/630, personal computer terminal (NET PC) 630, and network computer (NC) 630, as well as traditional *vending* machines can be referred to generally as *vending* machines.
A personal computer (PQ-PC terminal (NET PC)-network computer (NC) 630 can be a PC 102 and can be a PC-NET PC...

...to as a public PC. For purposes of disclosure this form of PC will be referred to as a PC 630.

Vended products from a *vending* *machine* can include usage time, device ...and other related supplies (e.g. food, beverage, staplers, film, rubber bands, paper clips, note pads, computer disks, pens, and pencils). Vended services from a *vending* *machine* can include charging for usage time of a PCNET PC-NC 630, charging for usage time of online services, access to program applications, or databases...

...public access electronic commerce terminal is a computing device, such as a system 500. A public access electronic commerce terminal can effectuate control of a *vending* *machine* as required while allowing a user of the system to view, *vend*, respond to, or purchase from

displayed interactive advertising. Furthermore, a user can make general inquires and obtain other information related to the interactive advertising from...

...electronic terminal. A system 500 can also be a transaction control device, such as a transaction control device 108.

1 0 The ability to view, *vend*, obtain information, respond to, or purchase from displayed interactive or electronic advertising by way of an electronic computing device is generally referred to as an...

...or as electronic commerce. A system 500 can also be an electronic computing device.

A typical business center can be comprised of a plurality of *vending* equipment. A 1 5 business center can include a copier 602A, a fax machine 604A, a laptop/palmtop print station 646, a data-port/phone...

...centers and retail outlets (store or location) require a plurality of copiers 602, a plurality of faxes 604, a plurality of PCs 630, and other *vending* equipment to meet the needs of their customers.

A control system, and operational method which can interface and control a plurality of different types of *vending* equipment is also required. It is also desirable that each *vending* *machine* is networked to share resources and reduce undue duplication, and expense of equipment. For example, when printing a customer receipt is required, a single printer on the network can allow a plurality of *vending* machines to share the single printer. Furthermore, networking *vending* machines in a business center, or a retail outlet facility enables shared transaction processing capabilities and allows system integration with existing POS, PMS/MIS, and...communicate with a server 632 and/or a POS system 614 and/or PMS/MIS system 620 and/or a PC 630. In addition, a *handheld* device can data communicate by way of infrared communications means 502 with any *vending* equipment attached to a first local area network (LAN) 622 and/or a second local area network (LAN) 626 by way of a LAN connection ...

...1 YPHL (amber LED) LED's.

Interconnected with microcontroller 532 is an equipment control means 506. The equipment control means 506 enables and disables the *vending* equipment for use responsive to customer identification "authorization" by way of a smart card, debit card, credit card, or other input identification means. An equipment...

...relay, such as an OMRON relay #G2V DC5, and/or at least one opto-isolator, such as QUALITY TECH #MID400QT.
In an exemplary embodiment, a *vending* *machine* such as a printer 104, PC 630, a projector (not shown), fax machine 604A or copier 602A can be controlled by way of equipment control...

...part of the equipment control means 506), such as relay, or a transistor, or other control circuit operationally responsive to microcontroller 532.

Control of a *vending* *machine* can be facilitated by way of a switching device in a first state activating a circuit or setting a first state within the *vending* *machine* allowing the *vending* *machine* to function normally. Furthermore, the *vending* *machine* can be deactivated for use, by way of a switching device, in a second state, breaking a circuit or setting a second state within the *vending* *machine*, disabling the *vending* *machine*'s functionality.

1 5 Interconnected with microcontroller 532 is a *vend* counter/timer means 508. The *vend* counter/timer means 508 independently counts and/or times events that occur external to system 500. Microcontroller 532 by

way of the *vend* counter/timer means 508 can program functionally of the *vend* counter/timer means 508. Furthermore, *vend* counter/timer means 508 can monitor the status of a *vend* cycles, counts of *vending* events, and frequency of cycles wherein a rate, or rate change over a time period if required. Additionally, counter/timer means 508 can monitor time intervals, where *vending* price may depend on the length of time, a function, feature or *vending* *machine* is in use by a customer. A *vend* counter/time means 508 can be implemented with a ZILOG #Z80-CTC, and or a QUALITY TECH #MID400QT opto-isolator.

Interconnected with microcontroller 532 is...SILICON SYSTEMS 75T202-IP DTMF decoder, whereby microcontroller 532 by way of telephone interface control means 514, detects the telephone number being dialed by a *vending* *machine*, such as a fax, PC 630, data-port phone 648, or smart card re-value station 638.

Interconnected with microcontroller 532 is an electrically erasable...

...An alarm means 524 can be implemented using a PANASONIC piezoelectric ceramic buzzer #EFB-RL37C22. In an exemplary embodiment, a single enclosure fastened to a *vending* *machine* can contain a system 500, a hardware security interface means 522 (including motion and/or tilt sensors), and an alarm means 524. Motion of the *vending* *machine* imparts motion of fastened system 500 causing a tilting "alarm condition." Alternatively, an enclosure not fastened to a *vending* *machine* containing a system 500, hardware security interface means 522, and alarm means 524 can have I 0 motion and/or tilt sensors fastened to a *vending* *machine* external to the system 500 enclosure interconnected as required for desirable operability.

Interconnected with microcontroller 532 are relay switches 526. Relay switches 526 can be...

...a solenoid. In an exemplary embodiment, the solenoid control means 528 is responsive to a system 500 detecting an "out-of-supply" condition of a *vending* *machine* and opening a supply door/drawer to allow a customer to restock the *vending* machines. Supplies can include paper, ink and toner for a copier, printer, fax, or PC. In another exemplary embodiment, the solenoid control means 528 can...

...as other data processing equipment) can by way of PCMCIA interface 542 access network 600. Access to the network can selectively include other systems 500, *vending* machines, servers, VSAT communications, or any other device or communication means connected to the network 600. Furthermore, other data processing equipment by way of 1...

...system 614, PMS/MIS system 620, or PC 630. Other data processing equipment can data communicate by way of the PCMCIA interface 542 with any *vending* *machine* or other device attached to the first LAN network 622 or the second LAN network 626 by way of a system 500 interconnected with said *vending* *machine*.

As an example, a service technician desiring to record network system readings or program functionality of a system 500 controller or network server (referred to...

...Buoy or other networking scheme as is known to one skilled in the art.

In an exemplary embodiment the LAN network connection means 556 allows *vending* equipment to be located in permanent or temporary "stationary locations," "in-room locations" and on "*mobile* carts." A *mobile* cart PC 630, copier 602A or fax 604A can be located pool side, - 16 in a recreation area, or in a hotel room and remain...50944NCU-FW- I and an EPSON SED1354FOA LCD controller.

In an exemplary embodiment, a plurality of systems 500 can be connected to a plurality of *vending* machines. Furthermore, a plurality of systems

500 can be networked together with a PC 630, a server 632, a PMS/MIS 620, or a POS...

...of systems 500 networked together with a PC 630, a server 632, a PMS/MIS system 620, and a POS system 614.

Any number of *vending* machines and *vending* *machine* types can be controlled by way of a plurality of systems 500. Any number of servers, POS systems, PMS/MIS systems, and remote locations can...card, cash, coin, or other currency means and obtain a debit card, smart card or other ID form. Access to products and services from the *vending* machines controlled by way of network 600 can then be obtained with the valid form of ID. A customer can also present a credit card...

...embodiment, a printer 69A can be a general-purpose printer for use by a customer, and/or any system 500 device on network 600. Any *vending* *machine* or universal server on the first LAN 622 or the second local area network (LAN) 626 can also access and data communicate with the printer...

...embodiment, a printer 69B can be a general-purpose printer for use by a customer, and/or any system 500 on network 600.

Furthermore, any *vending* *machine* or universal server on the first LAN 622, or the second LAN 626 can utilize printer 6913. Applications for the printer 69B can include general...

...quantities of printer 69A, or 69B can be interconnected with the network 600 to best serve customer convenience.

Interconnected with a pre-paid telephone card *vending* (re-value and/or dispense) machine 624 can be a system 500J. A system 500J can be a system 500. A ftirther interconnection exists between the system 500J and the first LAN 622. In an exemplary embodiment, the pre-paid telephone card *vending* *machine* 624 can effectuate the dispensing and re-valuing of pre-paid - 21 telephone cards. In addition to the pre-paid telephone card's intended use of operating a telephone, the pre-paid telephone card can also be utilized as an ID form to access, by way of a system 500, *vending* equipment interconnected with a system 500 and network 600.

Interconnected with *vending* *machine* 640 that dispenses goods, services, food, or beverage can be a system 500K. A system 500K can be a system 500. A further interconnection exists between the system 500K and the first LAN 622. In an exemplary embodiment, the food and beverage *vending* *machine* 640 can effectuate the dispensing of goods and services, food and beverage products.
Interconnected with an information/Internet kiosk 628 is the second LAN 626...

...control of the network 600. The PMS/MIS system 620 can manage data processing needs of the network 600, can store and allow modification of *vending* *machine* settings, and implement gathering and maintain marketing, customer survey and other informational databases.

Furthermore, PMS/MIS system 620 can support transaction processing, and/or implement...

...current in-store programming and functionally. The POS system 614 can manage data processing needs of the network 600, can store and allow modifications of *vending* *machine* settings, and can implement gathering and I 0 maintain marketing, customer survey and other informational databases. Further, POS system 614 can support transaction processing, and...

...all current in-store programming and functionally.

The server 632 can manage data processing needs of the network 600, can store and allow modifications of *vending* *machine* settings, and can

implement gathering and maintain marketing, customer survey and other informational databases. Also, server 632 can support transaction processing, and/or implement the...be an acceptable forms of ID.

There is shown in Figure 6A-6B, a floor plan illustrating how a network 600 with a plurality of *vending* machines and a plurality of systems 500, could be implemented in a retail location or in a hotel. Referring to Figure 6A, a representative floor...

...with copier 602B 1 5 and Fax 604B shown behind the front desk. In an exemplary embodiment, hotel operations copier, faxes, PC's and other *vending* machines can be connected to a network 600 and all business equipment (public use and private use) can be monitored, controlled and audited.

There is...or POS system can process the transaction data and - 26 determine the validity of the transaction to continue "approved" use or "denied" use of the *vending* equipment. Any suitable method of transaction verification can be employed including local or remote databases, credit bureaus, corporate accounts, in-store accounts, or very important...

...as a universal server can process the transaction data and determine the validity of the transaction to continue "approved" use or "denied" use of the *vending* equipment. Any suitable method of transaction verification can be employed including local or remote databases, credit bureaus, corporate accounts, in-store accounts, or very important...

...a third transaction process, a PC 630 can be used to determine validity of the transaction to continue "approved" use or "denied" use of the *vending* equipment. Any suitable method of transaction verification can be employed including local or remote databases, credit bureaus, corporate accounts, in-store accounts, or very important...

...transaction process is determined, processing moves to decision block 708. In decision block 708, a test is performed to determine if the use of the *vending* equipment has been authorized. If the resultant is in the affirmative, that is the resultant of the transaction processing is "approved," then processing moves to...

...declined." Processing control is then returned to the calling routine.

Processing in block 712 informs the user the transaction processing was "approved" and enables the *vending* for use. During use, relevant marketing data, and advertisements can be displayed on the system 500 interconnected with the *vending* *machine*. Relevant marketing data can include current date and time, location, total sale amount, and where appropriate total copies, faxed pages, time used, PC usage, online...

...change.

Processing then moves to block 716 of Figure 9B.

- 27 Processing in block 716 allows advertising to be displayed on each system 500 or *vending* *machine* capable of displaying advertising. Advertisements can be distributed and displayed at any time during the *vend* cycle.

In an exemplary embodiment, a universal server distributes advertising content over a network 600. When an advertisement is routed to a system 500 or *vending* *machine* currently in use, the system 500 or *vending* *machine* in use, determines if an advertisement can be displayed.

If an advertisement can be displayed at the current time then the advertisement is displayed. The routing criterion attached to the advertisement determines which systems 500 or *vending* machines will accept and display the advertisement.

For example, if a tennis shoe advertisement is globally distributed and routed to all systems 500 then each system 500 or *vending* *machine* that can, will accept and display the advertisement. Alternatively, an advertisement can be target marketed to a selected group of systems 500 and *vending* machines. For example, it is desirable to distribute and display "run" an advertisement for a multifunction fax machine. The fax machine is target marketed to...

...5 small office-home office ("SOHO") market. By distributing the advertisement globally with attached routing criterion to only "run" the advertisement on systems 500 and *vending* machines in retail stores that specialize in SOHO related business services then the advertisement will only be "run" in that market on those systems 500 and *vending* machines. Routing criterion can be utilized to distribute and manage advertising content by way of any universal server, over any network 600, to any system 500 or *vending* *machine* capable of displaying such advertisements.

Processing then moves to block 718.
Processing in block 718 allows a user to purchase by electronic commerce, transaction items advertised and displayed on any system 500 or *vending* *machine* capable of displaying the advertisements. The electronic commerce transaction can be processed as previously disclosed in processing block 706. Processing then moves to decision block...

...of previous transaction data, processing moves to block 706. If a user decides to terminate the transaction or the universal server or system 500 or *vending* *machine* decides to terminate the transaction, processing moves to block 726.

Processing in block 726 terminates a transaction by disabling the appropriate *vending* machines and printing a transaction receipt. Printing of a receipt can be optional or at the user's request. Processing then moves to block 728...

...500 can independently request a response from a universal server. Networks may vary from location to location with respect to the type and quantity of *vending* equipment, and systems 500 networked. Furthermore, remedies to problems such as "out of supplies," and appropriate responses to "alarm conditions" can vary in accordance with...
...a plurality of systems 500 begins processing in block 802. The universal server is interconnected with a plurality of systems 500 and a plurality of *vending* machines by way of a first LAN 622 and/or a second LAN 626. In block 802 the universal server, PMS/MIS 620 or POS system 614, or PC 630 determines if a service condition has been requested by a system 500 or a *vending* *machine* connected to the network 600. Such service conditions can include out of supply, determination of a lengthy period of time without usage, inability to successfully...entered into a service database controlled by the universal server.

For example, when a system 500 detects that a transaction has concluded on a particular *vending* *machine* controlled by said system 500, a transaction complete service record can be sent to server 632. Server 632 in accordance with programming from a network...

...subset of all systems 500 or all systems 500 on a network 600.

1 5 A broadcast service message can include changing system 500 or *vending* *machine* operating parameters (such as pricing). A universal server can place a system 500 or *vending* *machine* in or out of service or choose to print on a network 600 printer. The systems 500 can respond to a service broadcast with an...
...Figure 1 1, a transaction routing routine 900. Processing begins in decision block 902, wherein transaction data is evaluated to determine if it is PRE-*VEND* or POST-*VEND* transaction data. If the resultant is that the transaction data is PRE-*VEND* transaction data, that is the customer has not yet used the *vending* equipment for a product or

service, processing moves to block 904. If the resultant is that the transaction data is POSTVEND transaction data, that is, the customer has previously been authorized to use the *vending* equipment and has now concluded the *vending* transaction, processing moves to block 914.

In block 904, any acceptable form of identification (ID) presented by a customer or other person in any system...have a hotel PMS/MIS system substitute or append a room number as a second ID form. When the user has completed use of the *vending* *machine*, a bill can then be posted to a hotel room record within the hotel's PMS/MIS system.

In another exemplary embodiment, a customer can...

...as presented and grant access to an unattended 24-hour access area. The same form of ID can then be presented in a variety of *vending* machines. Upon the presentation of the first form of ID in these *vending* machines the DII processing can substitute or append a second form of ID, an in-store account number. As the customer uses a plurality of *vending* machines for goods and services transaction billing can be posted to the in-store customer's account.

In another exemplary embodiment, a customer can present a first form of ID requesting to use a *vending* *machine*. Through DII processing it may be determined that the customer qualifies for special pricing, or has earned a promotional reward. The DII process step could...

...occurring, a service request can be initiated by calling service routine 800. With instructions from the DII settings, including pricing in the system 500 or *vending* *machine* the customer is being authorized to use, can be reprogrammed. Upon authorization approval, the *vending* *machine* and its performance will be custom programmed for this customer's use.

In another exemplary embodiment, a user presents a first form of ID and ...

...to a DII resident on or accessible by a universal server, resident in or accessible by a system 500, resident on or accessible by a *vending* *machine*, or resident in a database accessible by a universal server, system 500, or *vending* *machine*. If the transaction requires a DII processing step, the step can be performed transparent to the users or with the user's input. Furthermore, the...by way of VISA/MASTERCARD Secure Electronic Transaction ("SET") protocol standard.

Furthermore, SET transaction processing can be implemented by way of a system 500, a *vending* *machine*, or a universal server. The SET protocol standard for secured transaction processing can be implemented with other data processing equipment accessible by a system 500, *vending* *machine* or the universal server.

Processing in block 910 can effectuate the following exemplary embodiment. A customer can enter or check into at hotel or retail...

...entered into the hotel's or retailer's PMS/MIS or POS system.

The customer can then present the second ID form to facilitate a *vending* transaction in any system 500. Transaction information by way of the network 600 can data communicate to the universal server transaction information to obtain first...

...paying cash, charging a smart card or credit card, charging an account, or recording the charges in a database.

Processing in block 912 routes PRE-*VEND* transactions for validation. Transaction validation can occur in a plurality of ways dependent on server programming, hotel/retail outlet preference, as well as based on ...

...the transaction processing is data communicated to the requesting system 500. If the resultant is in the affirmative, the customer is "approved" to use the *vending* equipment, then the requesting system 500 activates the *vending* equipment for use by the customer. If the resultant is in the negative, that is the customer has been "declined" for *vending* *machine* usage, then the requesting system 500 denies usage of the appropriate *vending* *machine*.

The customer is notified of the "declined" status by way of LED indicator means 504, voice record and playback means 570, first display means 582, or other indicators means. Processing then moves back to the calling routine.

Processing in block 914 routes POST-*VEND* transaction data. POST-*VEND* transaction data includes PRE-*VEND* identification data, in addition to the marketing data generated resultant from the *vend* process.

Examples of PRE-*VEND* transaction data can include identification, date, time, appended ID data, sale limits, system pricing, merchant identification, routing codes, and system 500 ID codes. Additional PRE-*VEND* transaction data can include network traffic codes, authorizing - 35 sale amounts, system 500 configuration parameters, database access codes, remote location codes, currency codes, terminal codes...

...include electronic commerce purchases, smart card re-valued totals, laptop usage, data port usage, and/or other marketing/transaction measurement/indicator data.

Routing of post-*vend* transaction processing by way of the DII is resultant from the updating of processing databases, accounting databases, and marketing databases in which the DII controls, manages, and/or has access to as shown in block 908. Further, post-*vend* transaction processing by way of the DII is resultant from post processing of credit cards, smart card and other types of transactions that require an intervening process to effectuate an electronic transfer of funds.
PRE-*VEND* and POST-*VEND* transactions can be processed by way of the PC 630 simultaneously and transparently to a user of the same PC 630. This functionality allows the PC 630 to be a *vending* *machine* interconnected with a system 500, a universal server such as server 632, PMS/MIS system 620 or a POS system 614. Furthermore, the PC 630...

...connection, or other network interface.

There is shown in Figure 12, a system self-configuring routine 1000. In an exemplary embodiment, each system 500 or *vending* *machine* can be preprogrammed with a network address ID or can have a network address ID automatically assigned. In certain network configurations a preprogrammed network address...

...a unique polling beacon address. Processing then moves to block 1008.

Processing in block 1008 waits for data communication responses from systems 500 and/or *vending* machines on network 600. If a system 500 or *vending* *machine* on network 600 1 0 has been preprogrammed with a network address, then said system 500 or *vending* *machine* data communicates a response to the polling beacon. If, however, a system 500 or *vending* *machine* on network 600 has not been preprogrammed, then a system 500 or *vending* *machine* desiring a network address can data communicate a response to the polling beacon. A universal server then creates (if not already created) a network configuration database. Data communication can then 1 5 be conducted on network 600 with any system 500 or *vending* *machine*. Network addresses can take the form of Internet IP type addressing.

Processing in the system self-configuring routine continues until each

system 500 and *vending* *machine* has been assigned a valid network address. Processing then returns to the calling routine.

There is shown in Figure 13, a re-value smart card...universal server.

Alternatively, a help desk can initiate a request for "HELP" or "SERVICE" broadcasting such a request to one or more systems 500 or *vending* machines. The help desk can intervene, initiating a "HELP" or "SERVICE" request to effect changes/upgrades/repairs to any *vending* *machine*, any system 500, any universal server, or any other equipment residing on the network 600.

Furthermore, a help desk can intervene, initiating a "HELP" or "SERVICE" request to page a customer in a hotel, retail outlet, or other location in proximity to a system 500 or *vending* *machine*. Processing then moves to block 1204.

In block 1204, a data communication between the universal server and the system 500 requesting "HELP" or "SERVICE" occurs...

...or "SERVICE" and the "HELP or "SERVICE" source.

The term "HELP" or "SERVICE" can include a response to interactive advertising, electronic commerce activities or processes, *vending* *machine* usage requests, emergency needs, and other general purpose question and answer requests. The term "LIVE" can include viewing, talking, and exchanging data with another person...

...600 to provide data communication for "HELP" or "SERVICE" requirements. In addition, any system 500 residing on the network 600 can, by way of the *vending* *machine* interconnected with said system 500, such as a PC 630, data communicate with a remote location to obtain "HELP or "SERVICE" data. Then, by way...

...originally requesting "HELP" or "SERVICE". The original system 500 requesting "HELP" or "SERVICE" can be the same system 500 in which an interconnection with a *vending* *machine*, such as a PC 630 is relied upon to obtain "HELP" or "SERVICE" from a remote location.

Such a remote help desk can reside on...

...the prescribed service, change, or adjustment can be made over network 600. Whether the change is to a system 500, the universal server, or any *vending* *machine* (for example a PC 630) interconnected with a system 500 changes can be made by way of network 600. Such service, changes, adjustments, upgrades, and...LIVE" video feed to obtain instruction and have "HELP" and/or "SERVICE" questions answered. As necessary, the operator of the help desk can access the *vending* *machine* (in particular the PC 630) and aid the users in resolving operational, procedural, or other service related problems. Processing then moves to block 1210.

Processing...

...advertising as well as each of the other types of advertising disclosed in the present invention. Advertising content displayed on either a system 500 or *vending* *machine*, such as PC 630 can be monitored, controlled, distributed, and shown by way of network 600 and a universal server.

In addition to the DII...

...such as printer 69A or printer 69B. In an exemplary embodiment, print data can be advertisement print data, transaction summary print data, receipt print data, *vending* *machine* print data, such as from a PC 630, or other print data.

If a system 500 is preprogrammed with a network 600 network location ID ...back to block 1404, wherein the universal server can intervene to best complete the print data request.

There is shown in Figure 17, a POST-*VEND* transaction processing routine 1500.

Processing begins in block 1502, wherein a POST-*VEND* transaction is data communicated to the universal server. Processing then moves to block 1504.

In block 1504, the universal server, by way of DII processing (as required) routes the POST-*VEND* transaction for payment, posting, or billing. The process of payment, posting or billing is generally referred to as "settling" or a "settlement" transaction. Transactions can...

...smart card, pre-paid card, hotel key/card, or biometric) to different remote locations, or to different on-site or off-site databases. Furthermore, post-*vend* transactions can be routed based upon preprogrammed criteria. For example, all credit card transactions requiring "settlement" can be routed to a first credit bureau until...

...requiring "settlement" can then be routed to a second credit bureau. Processing then moves to block 1506.

In block 1506, non-credit card and POST-*VEND* transactions not requiring any additional third party port processing (i.e. by way of a credit bureau) are "settled" by posting the POSTVEND transaction data...

...DII processing (as required) to the appropriate remote location, or on-site or off-site database. The universal server can be preprogrammed to store POST-*VEND* transaction and "batch" post transaction data based on a preprogrammed criteria.

Such "batch" posting preprogrammed criteria can be based in part on date, time, or...

...process of posting any number of transactions at once in a formatted block of data. Processing then moves to block 1508.

In block 1508, POST-*VEND* transactions reliant on a third party processor (i.e. credit cards) are processed in accordance with preprogramming of the universal server.

Preprogramming of the universal...

...procedures disclosed in block 1504, and 1506. Processing then moves to block 1510.

In block 15 1 0, the universal server determines whether the POST-*VEND* transaction processing was successful. If the POST-*VEND* transaction processing was not successful, that is, the universal server was unable to post process the POST-*VEND* transaction, then the universal server can data communicate the "unsettled" post *vend* transaction to a remote locate. Such a remote location can be a computer center that monitors the functionality of a plurality of universal servers. The...

...a test is performed. A test is performed to determine if a preprograrnmed number of hours have elapsed. Each hour a system 500 or a *vending* *machine* interconnected with a system 500 is not operated successfully (a complete *vend* cycle) by ...and programmed to respond.

Processing then moves to block 1604.

Processing in block 1604, detects if a malfunction has occurred with a system 500, a *vending* *machine* interconnected with a system 500, or a printer, such as printer 69A or 69B.

- 44 Other *vending* machines and data processing equipment on network 600 can also be tested for malfunctions. Malfunction error messages that are detected by a system 500 can...

...network 600. The polling is equivalent to requesting each system 500 to perform a self-test, and to perform a test to determine if the *vending* *machine* interconnect with said system 500 is operating correctly. Processing then moves to block 1608.

In block 1608, processing of a detected error condition occurs. The...

Claim

I I . A public access electronic commerce terminal for simultaneously controlling a plurality of *vending* machines and conducting electronic commerce transactions comprising: a transaction control device interconnected with at least one of said plurality of *vending* machines for controlling said interconnected *vending* *machine*; an input device interconnected with said transaction control device for inputting user data; a display device interconnected with said transaction control device for displaying information...

...public access electronic commerce terminal in accordance with claim 1, wherein said display means displays interactive advertising and information related to the processing of a *vending* transaction and or an electronic commerce transaction.

4 A public access electronic commerce terminal in accordance with claim 1, wherein said transaction control device is...

...status conditions.

20 A public access electronic commerce terminal in accordance with claim 1, further comprising an equipment control means for controlling usage of said *vending* *machine*.

21 A public access electronic commerce terminal in accordance with claim 1, further comprising a *vend* counter control means, for monitoring, counting, and controlling cycle event of said *vending* *machine*.

22 A public access electronic commerce terminal in accordance with claim 1, further comprising a mouse/keyboard control means, for controlling usage of a personal...

...is further comprised of a camera interconnected with said transaction control device, to communicate video for video conferencing.

34 A transaction processing method for processing *vending* and electronic commerce transactions by way of a public access electronic commerce terminal system comprising the steps of:

a) capturing transaction data;

b) identifying transaction...error condition;

C) allowing a remote location to poll a universal server to data communicate with a plurality of public access electronic commerce terminals and *vending* equipment requesting system status information;

d) determining if an error condition is present based on said system status information; and

e) allowing said universal server...data communication was successful; and

f) sending print data to said universal server when data communication was not successful.

55 A method of processing post *vend* transaction data by way of a public access

electronic commerce terminal system comprising the steps of:
a) data communicating said post *vend* transaction data to a universal server;
b) determining whether post *vend* transaction routing is required;
C) routing said post *vend* transaction data for settlement when required;
d) routing said post *vend* transaction data for posting when required;
e) processing said post *vend* transaction data in accordance with said universal
server's programmed settings; and
f) determining if said post *vend* transaction data processing was successful.

56 A method of servicing a request from a universal server, a property *management* system, a *point* of sale system, a management information system, a personal computer, and or a user by way of a public access electronic commerce terminal system comprising...

?t s21/3,k/6

21/3,K/6 (Item 4 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT

00541103 **Image available**

A PHONE HAVING ACCESS TO THE INTERNET FOR THE PURPOSES OF TRANSACTING E-MAIL, E-COMMERCE, AND E-BUSINESS, AND FOR COMMUNICATING VOICE AND DATA

TELEPHONE AVEC ACCES A INTERNET DESTINE A DES TRANSACTIONS PAR COURRIER ELECTRONIQUE, COMMERCE ELECTRONIQUE ET AFFAIRES ELECTRONIQUES ET A LA COMMUNICATION DE SONS VOCAUX ET DE DONNEES

Patent Applicant/Assignee:
USA TECHNOLOGIES INC,
Inventor(s):
KOLLS H Brock,

Patent and Priority Information (Country, Number, Date):
Patent: WO 200004476 A1 20000127 (WO 0004476)
Application: WO 99US15937 19990714 (PCT/WO US9915937)
Priority Application: US 9893475 19980720; US 99293358 19990416; US 99293129 19990416; US 99335327 19990617
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 23113

Fulltext Availability:
Detailed Description
Claims

English Abstract
...invention relates to a universal advertising and payment system and method for networking, monitoring and effectuating e-mail, e-commerce, and e-business and controlling *vending* equipment and applications. The system can effectuate electronic commerce and interactive advertising at the point of sale in this instance at a public, private or cellular phone. *Vending* equipment includes copiers, phones (public, private, cellular), facsimile machines, printers, data-ports, laptop print stations, notebook computers, palmtop computers (PALM PILOT), microfiche devices, projectors, scanners, cameras, modems, communication access, personal data assistants (*PDA*'s), pagers, and other *vending* machines, personal computers (PC), PC terminals (NET PC), and network computers

(NC). *Vending* equipment can be networked to each other through a first network, programmable and accessible by a PC, server, point of sale (POS) system, property or...

...information system (PMS/MIS), and networked to a second network. The first network and second network can be the same network. Complete control of a *vending* *machine*'s functionality including usage, control, diagnostics, inventory, and marketing data capture can be effectuated locally or by remote connection to the network. Remote connection to...

...and other wire and wireless transmission. The present invention allows a user to obtain authorization for use, pay for products and services, and configure the *vending* equipment with a smart card, or magnetic card (card). Magnetic cards include phone, smart card, credit card, debit card, pre-paid, automated teller machine (ATM...

French Abstract

...de poche (PALM PILOT), des appareils a microfiches, des projecteurs, des scanners, des cameras, des modems, des dispositifs d'acces aux communications, des assistants numeriques (*PDA*), des recepteurs d'appel de personnes et d'autres appareils de vente, des ordinateurs personnels (PC), des terminaux de PC (NET PC) et des ordinateurs...

Detailed Description

... advertising and payment system and method for networking, monitoring, collecting data, selling goods and services, controlling interactive advertising, controlling and effectuating electronic commerce and controlling *vending* equipment including private and public phones. The present invention also relates to physical and virtual networking of private and public phones and network hardware, server...

...network control, and network security. The present invention can be implemented in a manner to allow operational monitoring and control of networks (and network hardware), *vending* machines including private and public phones, electronic mail (e-mail), electronic commerce (e-commerce), electronic business (e-business), payment for goods and services, delivery of...control and payment system to distribute and display interactive advertising, conduct electronic mail, electronic commerce, electronic business, and control the billing for the use of *vending* equipment. *Vending* equipment can include copiers, phones (public, private, cellular), facsimile machines, printers, data-ports, laptop print stations, notebook computers, palmtop computers (PALM PILOT), microfiche devices, projectors, scanners, cameras, modems, communication access, personal data assistants (*PDA*'s), pagers, and other types of *vending* machines, personal computers (PC), PC terminals (NET PC), and network computers (NC).

One aspect of the present invention provides a system for public access to...

...desk routine 1200 flowchart;
Figure 15 shows an advertising routine 1300 flowchart;
Figure 16 shows a printing routine 1400 flowchart;
Figure 17 shows a POST-*VEND* transaction processing routine 1500 flowchart; and
Figure 18 shows an error detection routine 1600 flowchart;
DETAILED DESCRIPTION OF THE INVENTION
Figure 1 shows an overview of the universal interactive advertising and payment system for *vending* of public access electronic commerce and business related products and services. The universal interactive advertising and payment system is a computer program which may reside in a carrier, such as a disk, diskette or a modulated carrier wave.

A *vending* *machine* is defined as any piece of equipment in which products and/or services can be rendered therefrom. Referring again to Figure 1, control of a *vending* *machine* (referred to as *VENDING*

MACHINE USAGE) can involve a first step of denying usage, access, service, or products from the *vending* *machine* as shown in step 10. Next, in step 20 the system accepts user input (data and/or monetary, disclosed herein as PRE-*VEND* TRANSACTION DATA (i.e.

"AUTHORIZATION")), and then in step 30, the system authenticates or verifies the user's input to determine if *VENDING* *MACHINE* USAGE is "authorized." If, in step 40, *VENDING* *MACHINE* USAGE is "authorized" the processing proceeds to step 50. In step 50, the system effectuates the delivery, monitoring, and dispensing of the product, and/or service. Then, in step 60, the system processes the POST-*VEND* TRANSACTION DATA to effectuate user (customer) billing, and account maintenance. Lastly, in step 70, the system "settles" (effectuates the transfer of funds, i.e. payment) the POST-*VEND* TRANSACTION DATA.

Step 70 can be optional when a PRE-*VEND* TRANSACTION can both satisfy the
requirements of step 40, "authorization" and step 70, "settling. " Examples of when Step 70 may not be required, can include *vending* of a product or service when at the time of creating the PREVEND TRANSACTION DATA (i.e. the "authorization") the exact amount of the total sale is known. Other examples of when step 70 may not be required can include creating PRE-*VEND* TRANSACTION DATA (i.e. the "authorization") where no bill for the product or service will be incurred by the user (customer) (i.e. products and/or services for a particular user are "free").

One example of a *vending* *machine* is shown in Figure 2, a personal computer system, known as a system 100. The arrangement on table 129 is comprised of a PC 102...

...3D show an exemplary embodiment for the present invention, an unattended business center in which product and services can be vended. The control of a *vending* *machine* can include monitoring and accounting for products and services rendered from the *vending* *machine*. *Vending* machines can include copiers such as copiers 602A-602F, phone/data-port combinations such as phone 648, facsimile machines such as fax 604A-604B, and printers such as printer 104 and printer 612A-612G. Other types of *vending* machines can include, laptop/palm computer print stations such as laptop print station 646, microfiche devices (not shown), projection equipment (not shown), scanners (not shown...

...shown).

Additionally, peripherals such as personal computers (PC) 102/630, personal computer terminal (NET PC) 630, and network computer (NC) 630, as well as traditional *vending* machines can be referred to generally as *vending* machines.

A personal computer (PC)-PC terminal (NET PQ-network computer (NC) 630 can be a PC 102 and can be a PC-NET PC...to as a public PC. For purposes of disclosure this form of PC will be referred to as a PC 630.

Vended products from a *vending* *machine* can include usage time, device usage count, printed output, copies, printed pages, fax transmissions, and other related supplies (e.g. food, beverage, staplers, film, rubber bands, paper clips, note pads, computer disks, pens, and pencils).

Vended services from a *vending* *machine* can include charging for usage time of a PC-NET PCNC 630, charging for usage time of online services, access to program applications, or databases...

...public access electronic commerce terminal can be referred to as an electronic commerce terminal. A public access electronic commerce terminal can effectuate control of a *vending* *machine* as required while allowing a user of the system to view, *vend*, respond to, or purchase from displayed interactive advertising. Furthermore, a user can make general inquires and obtain other information related to the

interactive advertising from...

...control device, such as a transaction control device 108. An E-PORT manufactured by USA TECHNOLOGIES can be a system 500.

The ability to view, *vend*, obtain information, respond to, or purchase from displayed interactive or electronic advertising by way of an electronic computing device is generally referred to as an...

...or as electronic commerce. A system 500 can also be an electronic computing device.

A typical business center can be comprised of a plurality of *vending* equipment. A business center can include a copier 602A, a fax machine 604A, a laptop/palmtop print station 646, a data-port/phone 648, and...

...centers and retail outlets (store or location) require a plurality of copiers 602, a plurality of faxes 604, a plurality of PCs 630, and other *vending* equipment to meet the needs of their customers. A control system, and operational method which can interface and control a plurality of different types of *vending* equipment is also required. It is also desirable that each *vending* *machine* is networked to share resources and reduce undue duplication, and expense of equipment. For example, when printing a customer receipt is required, a single printer on the network can allow a plurality of *vending* machines to share the single printer. Furthermore, networking *vending* machines in a business center, or a retail outlet facility enables shared transaction processing capabilities and allows system integration with existing POS, PMS/MIS, and...communicate with a server 632 and/or a POS system 614 and/or PMS/MIS system 620 and/or a PC 630. In addition, a *handheld* device can data communicate by way of infrared communications means 502 with any *vending* equipment attached to a first local area network (LAN) 622 and/or a second local area network (LAN) 626 by way of a LAN connection ...

...and LN41YPHL (amber LED) LED's.

Interconnected with microcontroller 532 is an equipment control means 506. The equipment control means 506 enables and disables the *vending* equipment for use responsive to customer identification "authorization" by way of a smart card, debit card, credit card, or other input identification means. An equipment...
...relay, such as an OMRON relay #G2V DC5, and/or at least one opto-isolator, such as QUALITY TECH #MID400QT.

In an exemplary embodiment, a *vending* *machine* such as a printer 104, PC 630, a projector (not shown), fax machine 604A or copier 602A can be controlled by way of equipment control...

...part of the equipment control means 506), such as relay, or a transistor, or other control circuit operationally responsive to microcontroller 532.

Control of a *vending* *machine* can be facilitated by way of a switching device in a first state activating a circuit or setting a first state within the *vending* *machine* allowing the *vending* *machine* to function normally. Furthermore, the *vending* *machine* can be deactivated for use, by way of a switching device, in a second state, breaking a circuit or setting a second state within the *vending* *machine*, disabling the *vending* *machine*'s functionality.

Interconnected with microcontroller 532 is a *vend* counter/timer means 508. The *vend* counter/timer means 508 independently counts and/or times events that occur external to system 500. Microcontroller 532 by way of the *vend* counter/timer means 508 can program functionally of the *vend* counter/timer means 508. Furthermore, *vend* counter/timer means 508 can monitor the status of a *vend* cycle, counts of *vending* events, and

frequency of cycles wherein a rate, or rate change over a time period if required. Additionally, counter/timer means 508 can monitor time intervals, where *vending* price may depend on the length of time, a function, feature or - 13 *vending* *machine* is in use by a customer. A *vend* counter/time means 508 can be implemented with a ZILOG #Z80-CTC, and or a QUALITY TECH #MID400QT opto-isolator.

Interconnected with microcontroller 532 is...

...SILICON SYSTEMS 75T202-IP DTMF decoder, whereby microcontroller 532 by way of telephone interface control means 514, detects the telephone number being dialed by a *vending* *machine*, such as a fax, PC 630, data-port/phone 648, or smart card re-value station 638.

Interconnected with microcontroller 532 is an electrically erasable...

...broken. Further, hardware security interface means 522 includes a plurality of tilt sensors, wherein tilt or motion sensors can be placed on a plurality of *vending* equipment and peripherals. An alarm signal is resultant if the tilt sensors are activated (excessive tilting occurs). Furthermore, an "alarm condition" service request can be...

...destination location, remote or on the network. Alarm destination locations can include a front desk, security office, owner of the retail store, police or other *vending* device such as a server 632, a POS system 614, a PMS/MIS system 620 or a PC 630. A hardware security interface means can...

...An alarm means 524 can be implemented using a PANASONIC piezoelectric ceramic buzzer #EFB-RL37C22. In an exemplary embodiment, a single enclosure fastened to a *vending* *machine* can contain a system 500, a hardware security interface means 522 (including motion and/or tilt sensors), and an alarm means 524. Motion of the *vending* *machine* imparts motion of fastened system 500 causing a tilting "alarm condition. " Alternatively, an enclosure not fastened to a *vending* *machine* containing a system 500, hardware security interface means 522, and alarm means 524 can have motion and/or tilt sensors fastened to a *vending* *machine* external to the system 500 enclosure interconnected as required for desirable operability.

Interconnected with microcontroller 532 are relay switches 526. Relay switches 526 can be...solenoid. In an exemplary embodiment, the solenoid control means 528 is responsive - 15 to a system 500 detecting an "out-of-supply" condition of a *vending* *machine* and opening a sup-ply door/drawer to allow a customer to restock the *vending* machines. Supplies can include paper, ink and toner for a copier, printer, fax, or PC. In another exemplary embodiment, the solenoid control means 528 can ...

...as other data processing equipment) can by way of PCMCIA interface 542 access network 600.

Access to the network can selectively include other systems 500, *vending* machines, servers, VSAT communications, or any other device or communication means connected to the network - 16 600. Furthermore, other data processing equipment by way of...

...system 614, PMS/MIS system 620, or PC 630. Other data processing equipment can data communicate by way of the PCMCIA interface 542 with any *vending* *machine* or other device attached to the first LAN network 622 or the second LAN network 626 by way of a system 500 interconnected with said *vending* *machine*.
As an example, a service technician desiring to record network system readings or program ftinctionality of a system 500 controller or network server (referred to...Buoy or other networking scheme as is known to one skilled in the art.

In an exemplary embodiment the LAN network connection means 556 allows *vending* equipment to be located in permanent or temporary " stationary locations, " " in-room locations and on "*mobile* carts. " A *mobile* cart PC 630, copier 602A or fax 604A can be located pool side, in a recreation area, or in a hotel room and remain connected...50944NCU-FW- I and an EPSON SED1354FOA LCD controller.

In an exemplary embodiment, a plurality of systems 500 can be connected to a plurality of *vending* machines. Furthermore, a plurality of systems 500 can be networked together with a PC 630, a server 632, a PMS/MIS 620, or a POS...

...of systems 500 networked together with a PC 630, a server 632, a PMS/MIS system 620, and a POS system 614. Any number of *vending* machines and *vending* *machine* types can be controlled by way of a plurality of systems 500. Any number of servers, POS systems, PMS/MIS systems, and remote locations can...card, cash, coin, or other currency means and obtain a debit card, smart card or other ID form. Access to products and services from the *vending* machines controlled by way of network 600 can then be obtained with the valid form of ID. A customer can also present a credit card...

...embodiment, a printer 612A can be a general-purpose printer for use by a customer, and/or any system 500 device on network 600. Any *vending* *machine* or universal server on the first LAN 622 or the second local area network (LAN) 626 can also access and data communicate with the printer...

...embodiment, a printer 612B can be a general-purpose printer for use by a customer, and/or any system 500 on network 600.

Furthermore, any *vending* *machine* or universal server on the first LAN 622, or the second LAN 626 can utilize printer 612B. Applications for the printer 612B can include general...

...quantities of printer 612A, or 612B can be interconnected with the network 600 to best serve customer convenience.

Interconnected with a pre-paid telephone card *vending* (re-value and/or dispense) machine 624 can be a system 500J. A system 500J can be a system 500. A further interconnection exists between the system 500J and the first LAN 622. In an exemplary embodiment, the pre-paid telephone card *vending* *machine* 624 can effectuate the dispensing and re-valuing of pre-paid telephone cards. In addition to the pre-paid telephone card's intended use of operating a telephone, the pre-paid telephone card can also be utilized as an ID form to access, by way of a system 500, *vending* equipment interconnected with a system 500 and network 600.

Interconnected with *vending* *machine* 640 that dispenses goods, services, food, or beverage can be a system 500K. A system 500K can be a system 500. A further interconnection exists between the system 500K and the first LAN 622. In an exemplary embodiment, the food and beverage *vending* *machine* 640 can effectuate the dispensing of goods and services, food and beverage products.

- 23 Interconnected with an information/Internet kiosk 628 is the second LAN...

...control of the network 600. The PMS/MIS system 620 can manage data processing needs of the network 600, can store and allow modification of *vending* *machine* settings, and implement gathering and maintain marketing, customer survey and other informational databases.

Furthermore, PMS/MIS system 620 can support transaction processing, and/or implement...in-store programming and - 24 functionally. The POS system 614 can manage data processing needs of the network 600, can store and allow modifications of *vending* *machine* settings, and can

implement gathering and maintain marketing, customer survey and other informational databases. Further, POS system 614 can support transaction processing, and/or implement...

...all current in-store programming and functionally.

The server 632 can manage data processing needs of the network 600, can store and allow modifications of *vending* *machine* settings, and can implement gathering and maintain marketing, customer survey and other informational databases. Also, server 632 can support transaction processing, and/or implement the...be an acceptable forms of ID.

There is shown in Figure 6A-613, a floor plan illustrating how a network 600 with a plurality of *vending* machines and a plurality of systems 500, could be implemented in a retail location or in a hotel. Referring to Figure 6A, a representative floor...

...is shown with copier 602B and Fax 604B shown behind the front desk. In an exemplary embodiment, hotel operations copier, faxes, PC's and other *vending* machines can be connected to a network 600 and all business equipment (public use and private use) can be monitored, controlled and audited.

There is POS system can process the transaction data and determine the validity of the transaction to continue "approved" use or "denied" use of the *vending* equipment.

Any suitable method of transaction verification can be employed including local or remote - 28 databases, credit bureaus, corporate accounts, in-store accounts, or very...

...as a universal server can process the transaction data and determine the validity of the transaction to continue "approved" use or "denied" use of the *vending* equipment. Any suitable method of transaction verification can be employed including local or remote databases, credit bureaus, corporate accounts, in-store accounts, or very important...

...a third transaction process, a PC 630 can be used to determine validity of the transaction to continue "approved" use or "denied" use of the *vending* equipment. Any suitable method of transaction verification can be employed including local or remote databases, credit bureaus, corporate accounts, in-store accounts, or very important...

...transaction process is determined, processing moves to decision block 708. In decision block 708, a test is performed to determine if the use of the *vending* equipment has been authorized. If the resultant is in the affirmative, that is the resultant of the transaction processing is "approved," then processing moves to...

...declined." Processing control is then returned to the calling routine.

Processing in block 712 informs the user the transaction processing was "approved" and enables the *vending* for use. During use, relevant marketing data, and advertisements can be displayed on the system 500 interconnected with the *vending* *machine*. Relevant marketing data can include current date and time, location, total sale amount, and where appropriate total copies, faxed pages, time used, PC usage, online...

...change.

Processing then moves to block 716 of Figure 9B.
- 29 Processing in block 716 allows advertising to be displayed on each system 500 or *vending* *machine* capable of displaying advertising. Advertisements can be distributed and displayed at any time during the *vend* cycle.

In an exemplary embodiment, a universal server distributes advertising content over a network 600. When an advertisement is routed to a system

500 or *vending* *machine* currently in use, the system 500 or *vending* *machine* in use, determines if an advertisement can be displayed.

If an advertisement can be displayed at the current time then the advertisement is displayed. The routing criterion attached to the advertisement determines which systems 500 or *vending* machines will accept and display the advertisement.

For example, if a tennis shoe advertisement is globally distributed and routed to all systems 500 then each system 500 or *vending* *machine* that can, will accept and display the advertisement. Alternatively, an advertisement can be target marketed to a selected group of systems 500 and *vending* machines. For example, it is desirable to distribute and display "run" an advertisement for a multifunction fax machine. The fax machine is target marketed to the small office-home office ("SOHO") market. By distributing the advertisement globally with attached routing criterion to only "run" the advertisement on systems 500 and *vending* machines in retail stores that specialize in SOHO related business services then the advertisement will only be "run" in that market on those systems 500 and *vending* machines. Routing criterion can be utilized to distribute and manage advertising content by way of any universal server, over any network 600, to any system 500 or *vending* *machine* capable of displaying such advertisements. Processing then moves to block 718.

Processing in block 718 allows a user to purchase by electronic commerce, transaction items advertised and displayed on any system 500 or *vending* *machine* capable of displaying the advertisements. The electronic commerce transaction can be processed as previously disclosed in processing block 706. Processing then moves to decision block...

...of previous transaction data, processing moves to block 706. If a user decides to terminate the transaction or the universal server or system 500 or *vending* *machine* decides to terminate the transaction, processing moves to block 726.

Processing in block 726 terminates a transaction by disabling the appropriate *vending* machines and printing a transaction receipt. Printing of a receipt can be optional or ...500 can independently request a response from a universal server. Networks may vary from location to location with respect to the type and quantity of *vending* equipment, and systems 500 networked. Furthermore, remedies to problems such as "out of supplies," and appropriate responses to "alarm conditions" can vary in accordance with...

...a plurality of systems 500 begins processing in block 802. The universal server is interconnected with a plurality of systems 500 and a plurality of *vending* machines by way of a first LAN 622 and/or a second LAN 626. In block 802 the universal server, PMS/MIS 620 or POS system 614, or PC 630 determines if a service condition has been requested by a system 500 or a *vending* *machine* connected to the network 600. Such service conditions can include out of supply, determination of a lengthy period of time without usage, inability to successfully...

...entered into a service database controlled by the universal server.

For example, when a system 500 detects that a transaction has concluded on a particular *vending* *machine* controlled by said system 500, a transaction complete service record can be sent to server 632. Server 632 in accordance with programming from a network all systems 500 or all systems 500 on a network 600.

A broadcast service message can include changing system 500 or *vending* *machine* operating parameters (such as pricing). A universal server can place a system 500 or *vending* *machine* in or out of service or choose to print on a network 600 printer. The systems 500 can respond to a service broadcast with an...

...Figure 1 1, a transaction routing routine 900. Processing begins in decision block 902, wherein transaction data is evaluated to determine if it is PRE-*VEND* or POST-*VEND* transaction data. If the resultant is that the transaction data is PRE-*VEND* transaction data, that is the customer has not yet used the *vending* equipment for a product or service, processing moves to block 904. If the resultant is that the transaction data is POSTVEND transaction data, that is, the customer has previously been authorized to use the *vending* equipment and has now concluded the *vending* transaction, processing moves to block 914.

In block 904, any acceptable form of identification (ID) presented by a customer or other person in any system...

...have a hotel PMS/MIS system substitute or append a room number as a second ID form. When the user has completed use of the *vending* *machine*, a bill can then be posted to a hotel room record within the hotel's PMS/MIS system.

In another exemplary embodiment, a customer can...

...as presented and grant access to an unattended 24-hour access area. The same form of ID can then be presented in a variety of *vending* machines. Upon the presentation of the first form of ID in these *vending* machines the DII processing can substitute or append a second form of ID, an in-store account number. As the customer uses a plurality of *vending* machines for goods and services transaction billing can be posted to the in-store customer's account.

In another exemplary embodiment, a customer can present a first form of ID requesting to use a *vending* *machine*. Through DII processing it may be determined that the customer qualifies for special pricing, or has earned a promotional reward. The DII process step could...

...a service request can be initiated by calling service routine 800. With instructions from
9
the DII settings, including pricing in the system 500 or *vending* *machine* the customer is being authorized to use, can be reprogrammed. Upon authorization approval, the *vending* *machine* and its performance will be custom programmed for this customer's use.

In another exemplary embodiment, a user presents a first form of ID and ...to a DII resident on or accessible by a universal server, resident in or accessible by a system 500, resident on or accessible by a *vending* *machine*, or resident in a database accessible by a universal server, system 500, or *vending* *machine*. If the transaction requires a DII processing step, the step can be performed transparent to the users or with the user's input. Furthermore, the...

...by way of VISA/MASTERCARD Secure Electronic Transaction ("SET") protocol standard.

Furthermore, SET transaction processing can be implemented by way of a system 500, a *vending* *machine*, or a universal server. The SET protocol standard for secured transaction processing can be implemented with other data processing equipment accessible by a system 500, *vending* *machine* or the universal server.
Processing in block 910 can effectuate the following exemplary embodiment. A customer can enter or check into at hotel or retail...

...entered into the hotel's or retailer's PMS/MIS or POS system.

The customer can then present the second ID form to facilitate a *vending* transaction in any system 500. Transaction information by way of the network 600 can data communicate to the universal server transaction information to obtain first...

...paying cash, charging a smart card or credit card, charging an account, or recording the charges in a database.

Processing in block 912 routes PRE-*VEND* transactions for validation. Transaction validation can occur in a plurality of ways dependent on server programming, hotel/retail outlet preference, as well as based on ...the transaction processing is data communicated to the requesting system 500. If the resultant is in the affirmative, the customer is "approved" to use the *vending* equipment, then the requesting system 500 activates the *vending* equipment for use by the customer. If the resultant is in the negative, that is the customer has been "declined" for *vending* *machine* usage, then the requesting system 500 denies usage of the appropriate *vending* *machine*.

The customer is notified of the "declined" status by way of LED indicator means 504, voice - 37 record and playback means 570, first display means 582, or other indicators means. Processing then moves back to the calling routine.

Processing in block 914 routes POST-*VEND* transaction data. POST-*VEND* transaction data includes PRE-*VEND* identification data, in addition to the marketing data generated resultant from the *vend* process.

Examples of PRE-*VEND* transaction data can include identification, date, time, appended ID data, sale limits, system pricing, merchant identification, routing codes, and system 500 ID codes. Additional PRE-*VEND* transaction data can include network traffic codes, authorizing sale amounts, system 500 configuration parameters, database access codes, remote location codes, currency codes, terminal codes, and...

...including time, calls, etc.), smart card re-valued totals, laptop usage, data port usage, and/or other marketing/transaction measurement/indicator data.
Routing of post-*vend* transaction processing by way of the DII is resultant from the updating of processing databases, accounting databases, and marketing databases in which the DII controls, manages, and/or has access to as shown in block 908. Further, post-*vend* transaction processing by way of the DII is resultant from post processing of credit cards, smart card and other types of transactions that require an intervening process to effectuate an electronic transfer of ftinds.

PRE-*VEND* and POST-*VEND* transactions can be processed by way of the PC 630 simultaneously and transparently to a user of the same PC 630. This functionality allows the PC 630 to be a *vending* *machine* interconnected with a system 500, a universal server such as server 632, PMS/MIS system 620 or a POS system 614. Furthermore, the PC 630...

...connection, or other network interface.

There is shown in Figure 12, a system self-configuring routine 1000. In an exemplary embodiment, each system 500 or *vending* *machine* can be preprogrammed with a network address ID or can have a network address ID automatically assigned. In certain network configurations a preprogrammed network address...
...a unique polling beacon address. Processing then moves to block 1008.

Processing in block 1008 waits for data communication responses from systems 500 and/or *vending* machines on network 600. If a system 500 or *vending* *machine* on network 600 has been preprogranimed with a network address, then said system 500 or *vending* *machine* data communicates a response to the polling beacon. If, however, a system 500 or *vending* *machine* on network 600 has not been preprogrammed, then a system 500 or *vending* *machine* desiring a network address can data communicate a response to ...server then creates (if not already created) a network configuration database. Data communication can then be conducted on network 600 with any system 500 or *vending* *machine*. Network addresses

can take the form of Internet IP type addressing.

Processing in the system self-configuring routine continues until each system 500 and *vending* *machine* has been assigned a valid network address. Processing then returns to the calling routine.

- 39 There is shown in Figure 13, a re-value card...

...universal server. Alternatively, a help desk can initiate a request for "HELP" or "SERVICE" broadcasting such a request to one or more systems 500 or *vending* machines. The help desk can intervene, initiating a "HELP" or "SERVICE" request to effect changes/upgrades/repairs to any *vending* *machine*, any system 500, any universal server, or any other equipment residing on the network 600. Furthermore, a help desk can intervene, initiating a "HELP" or "SERVICE" request to page a customer in a hotel, retail outlet, or other location in proximity to a system 500 or *vending* *machine*. Processing then moves to block 1204.

In block 1204, a data communication between the universal server and the system 500 requesting "HELP" or "SERVICE" occurs...

...or "SERVICE" and the "HELP or "SERVICE" source.

The term "HELP" or "SERVICE" can include a response to interactive advertising, electronic commerce activities or processes, *vending* *machine* usage requests, emergency needs, and other general purpose question and answer requests. The term "LIVE" can include viewing, talking, and exchanging data with another person...600 to provide data communication for "HELP" or "SERVICE" requirements. In addition, any system 500 residing on the network 600 can, by way of the *vending* *machine* interconnected with said system 500, such as a PC 630, data communicate with a remote location to obtain "HELP or "SERVICE" data. Then, by way...

...originally requesting "HELP" or "SERVICE". The original system 500 requesting "HELP" or "SERVICE" can be the same system 500 in which an interconnection with a *vending* *machine*, such as a PC 630 is relied upon to obtain "HELP" or "SERVICE" from a remote location.

Such a remote help desk can reside on...

...the prescribed service, change, or adjustment can be made over network 600. Whether the change is to a system 500, the universal server, or any *vending* *machine* (for example a PC 630) interconnected with a system 500 changes can be made by way of network 600. Such service, changes, adjustments, upgrades, and...

...LIVE" video feed to obtain instruction and have "HELP" and/or "SERVICE" questions answered. As necessary, the operator of the help desk can access the *vending* *machine* (in particular the PC 630) and aid the users in resolving operational, procedural, or other service related problems. Processing then moves to block 1210.

Processing...advertising as well as each of the other types of advertising disclosed in the present invention. Advertising content displayed on either a system 500 or *vending* *machine*, such as PC 630 can be monitored, controlled, distributed, and shown by way of network 600 and a universal server.

In addition to the DII...

...such as printer 612A or printer 612B. In an exemplary embodiment, print data can be advertisement print data, transaction summary print data, receipt print data, *vending* *machine* print data, such as from a PC 630, or other print data.

If a system 500 is preprogrammed with a network 600 network location ID

...back to block 1404, wherein the universal server can intervene to best complete the print data request.

There is shown in Figure 17, a POST-*VEND* transaction processing routine 1500.

Processing begins in block 1502, wherein a POST-*VEND* transaction is data communicated to the universal server. Processing then moves to block 1504.
In block 1504, the universal server, by way of DII processing (as required) routes the POST-*VEND* transaction for payment, posting, or billing. The process of payment, posting or billing is generally referred to as "settling" or a "settlement" transaction. Transactions can...

...smart card, pre-paid card, hotel key/card, or biometric) to different remote locations, or to different on-site or off-site databases. Furthermore, post-*vend* transactions can be routed based upon preprogrammed criteria. For example, all credit card transactions requiring "settlement" can be routed to a first credit bureau until...

...requiring "settlement" can then be routed to a second credit bureau. Processing then moves to block 1506.

In block 1506, non-credit card and POST-*VEND* transactions not requiring any additional third party port processing (i.e. by way of a credit bureau) are "settled" by posting the POSTVEND transaction data...

...DII processing (as required) to the appropriate remote location, or on-site or off-site database. The universal server can be preprogrammed to store POST-*VEND* transactions and "batch" post transaction data based on a preprogrammed criteria. Such "batch" posting preprogrammed criteria can be based in part on date, time, or...

...process of posting any number of transactions at once in a formatted block of data. Processing then moves to block 1508.

In block 1508, POST-*VEND* transactions reliant on a third party processor (i.e. credit cards) are processed in accordance with preprogramming of the universal server.

Preprogramming of the universal...

...disclosed in block 1504, and 1506. Processing then moves to block 1510.

- 46 In block 15 1 0, the universal server determines whether the POST-*VEND* transaction processing was successful. If the POST-*VEND* transaction processing was not successful, that is, the universal server was unable to post process the POST-*VEND* transaction, then the universal server can data communicate the "unsettled" post *vend* transaction to a remote locate. Such a remote location can be a computer center that monitors the functionality of a plurality of universal servers. The...

...a test is performed. A test is performed to determine if a preprogrammed number of hours have elapsed. Each hour a system 500 or a *vending* *machine* interconnected with a system 500 is not operated successfully (a complete *vend* cycle) by a customer, a non-use timer is incremented. When a preprogrammed number of non-use hours has occurred, an error message can be...

...and programmed to respond. Processing then moves to block 1604.

Processing in block 1604, detects if a malfunction has occurred with a system 500, a *vending* *machine* interconnected with a system 500, or a printer, such as printer 612A or 612B.

Other *vending* machines and data processing equipment on network 600 can also be tested for malfunctions. Malfunction error messages that are

detected by a system 500 can...

...network 600. The polling is equivalent to requesting each system 500 to perform a self-test, and to perform a test to determine if the *vending* *machine* interconnect with said system 500 is operating correctly. Processing then moves to block 1608.
In block 1608, processing of a detected error condition occurs. The...

Claim
... plurality of status conditions.

32 An electronic commerce terminal in accordance with claim 1, further comprising an equipment control means for controlling usage of a *vending* *machine*.

33 An electronic commerce terminal in accordance with claim 32, further comprising a *vend* counter control means for monitoring, counting, and controlling cycle event of said *vending* *machine*.

34 An electronic commerce terminal in accordance with claim 1, further comprising a mouse/keyboard control means for controlling usage of a personal computer. - 51...commerce related data, electronic business related data, advertising information, transaction information, phone data, Internet data, or general purpose data.

58 A method of processing post *vend* transaction data by way of an electronic commerce terminal, said electronic commerce terminal being operationally related to a phone
comprising the steps of:
a) data communicating said post *vend* transaction data to a universal server; - 54
b) determining whether post *vend* transaction routing is required;
C) routing said post *vend* transaction data for settlement when required;
d) routing said post *vend* transaction data for posting when required;
e) processing said post *vend* transaction data in accordance with said universal server's programmed settings; and
f) determining if said post *vend* transaction data processing was successful.

59 A dynamic identification interchange method for exchanging one form of identification for another form of identification by way of...

...step; and
C) returning the resultant of step b for further processing.

60 A method of servicing a request from a universal server, a property *management* system, a *point* of sale system, a management information system, a personal computer, and or a user by way of an electronic commerce terminal, said electronic commerce terminal...
?t s21/3,k/7

21/3,K/7 (Item 5 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00516956 **Image available**
METHOD AND APPARATUS FOR COMMUNICATING APPLICATION SPECIFIC DATA OVER WIRELESS COMMUNICATION NETWORKS
PROCEDE ET APPAREIL PERMETTANT DE COMMUNIQUER, VIA DES RESEAUX DE RADIOCOMMUNICATION, DES DONNEES SPECIFIQUES A DES APPLICATIONS
Patent Applicant/Assignee:
AERIS COMMUNICATIONS INC,
Inventor(s):
LADUE Christoph K,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9948308 A1 19990923

Application: WO 99US4638 19990302 (PCT/WO US9904638)
Priority Application: US 9844373 19980318
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AL AM AT AT AU AZ BA BB BG BR BY CA CH CN CU CZ CZ DE DE DK DK EE EE ES FI FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SK SL TJ TM TR TT UA UG UZ VN YU ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 26883

Fulltext Availability:
Detailed Description
Claims

English Abstract
Communicating messages between a cellular *mobile* radio communicator (100) and a central monitoring station (120) over a communication network that includes a voice channel and a control channel (372). The voice...

French Abstract
L'invention concerne la communication de messages entre un dispositif (100) de radiocommunication *mobile* cellulaire et une station (120) de surveillance centrale via un reseau de communication comportant un canal vocal et un canal (372) de commande. Le canal...

Detailed Description
... USAT) private satellite DAMA based mesh node networks, time shared TDM/TDMA VSAT networks, permanently assigned multiple access (PAMA) TDMA, direct broadcast satellites (DBS) and *mobile* satellite systems. The present invention also relates to nanocell, microcell, minicell, picocell and macrocell base sites, base transceivers stations (BTS), that are fully integrated with bi-directional Ka, Ku, C band, and L Band communications satellite transceiver earth stations and Ininarsat, teledesic LEO and Iridium LEO *mobile* satellites, *mobile* earth stations (MES), main hub-teleport satellite earth stations.

Description of the Related Art
There are wireless communications systems known in the art today that support multi-formatted data protocols and radio frequency conversion. In fact, the seminal concepts that spawned cellular, PCS, GSM and *mobile* satellite
communications networks originally were from conventional public switch telephone networks (PSTN) for; inter central office switch; inter exchange ANI/wink protocols, and person to...

...invention of 800 number services, centralized calling card exchange data bases and other such means and methods, gave rise to today's cellular, PCS and *mobile* satellite communications technology; that enable automatic roaming, multi standard communications apparatus designs, bi directional *mobile* switching centers, home location registers, SS7 networks,
X.25 networks, ISDN networks, asynchronous transfer mode (ATM) networks and others. These ground breaking concepts are expressed today in contemporary *mobile* switching protocols, satellite ground station protocols, switched satellite protocols (SSP) and base station or base transceiver station protocols; that utilize today's cutting edge mesh...

...and thus creates a quantum leap towards a complete paradigm shift, that enables total; multi mode and or muth communications standard flexibility in and for *mobile* and stationary application specific wireless data communications. The present invention merges multiple cellular, PCS, communication satellite, interriet world wide web (WWW), and broadband fiber optic...ATM banking, credit card verification and other low data

time shared services. Also VSAT and USAT was created to enable small terminal
or hand held *mobile* satellite services. VSAT and USAT operate in UHF frequencies, L-band frequencies, X band military frequencies, and Ku and Ka band frequencies. However, there are no satellites or satellite networks that support *mobile* and stationary data terminal services. Current K band satellite do not support *mobile* services because of the inherent limits of *mobile* terminal antenna signal gain characteristics and other such problems such as satellite power and capacity.

The present invention provides the missing low cost *mobile*, by high data
rate link by combining UHF and K band VSAT and USAT fixed point, time shared TDM/TDMA satellite terminals and networks, and...

...NMT-450, GSM-900,
GSM-1800, GSM-1900, IS-95 CDMA, IS-136 TDMA, I900Mhz CDMA, 1900Mhz TDMA, 1900Mhz GSM TDMA, SMR-dispatch, Enhanced Specialized *Mobile* Radio ESMR-NEXTELL, Cordless telephone systems such as DECT, CT I -CT2+, PHS and DCS- 1 800, Metrocom mesh node high density, low mobility systems...

...and ESMR air interface, PSTN signaling network standards.

In fact the present inventions means, methods and apparatuses create a complete packet data based application specific *mobile* and stationary communications system, that is cost effective and ...data packet, or signaling channel data packet, containing application specific coded data information bits, is transmitted from a data only, or hybrid voice and data *mobile* or stationary communications apparatus to a specially combined control channel only cellular and or PCS multi sector, or single sector, macro, mini, micro, pico, or the designated *mobile* or stationary communicator. Said base site carries no voice traffic and converts received VSAT data packet or packet bundle protocol into forward analog control channel...

...or forward paging channel, or forward broadcast channel protocol, or forward digital control channel (DCCH), and transmits said data packet to the designated application specific *mobile* or stationary communicator via selected control channels that are fully integrated with an application specific device.

Furthermore, this novel usage of terrestrial cellular and PCS...

...channels, digital access channels, authentication channels, set up channels, signaling channels, that are fully integrated via hardware, firmware and software means with fixed point and *mobile* UHF, C-band, Ku band, Ka band and
L band VSAT and USAT UHF, C band, Ku band, Ka band, L band and X band satellite terminal protocols, and assigned satellite transponder channels, guard bands, authentication band networks; that create a new wireless world wide web of low cost *mobile* and stationary application specific data communication capabilities that enables such application specific data services as; two way paging, motor vehicle fleet management, motor vehicle anti...

...watch, medical alert, vital sign monitoring, outpatient tracking, wireless gambling, utility electrical and gas meter reading, oil and gas well head monitoring, security system reporting, *vending* *machine* inventory status and system diagnostics snap shot reporting, point-of-sales, Branch/ATM, credit card verification, casino and off site wireless gambling, e-mail access...

...136, IS
1049 IS-95@ IS-661, and 2Ghz PCS. Operational platfonns; AMPS, NAMPS, DAMPS, TACS, ETACS, JTACS, NMT-450, NMT-900, Global System for *Mobile* (GSM), DCS- 1 800, DCS- 1 900, DCS-900,1900 MHz CDMA, 1900 MHz

TDMA, 1900 MHz GSM-TDMA, Nextell-GSM-TDMA, wideband data mesh...causing disruption to conventional cellular, PCS, Broadband, internet and satellite voice and data communications. In fact the present invention does not impact conventional cellular, PCS *mobile* switching centers (MSC), conventional base sites, conventional cable head ends, inter exchange network nodes; copper based or fiber optic based, in that the CCAD-NET...

...voice and control channel frequencies, and without impacting any data link; 56 kbps, TI, line-of-sight microwave resources that are interfaced with the host *mobile* switching center. CCAD-NET-DCS operates without using any capacity resources of the host cellular network, while at the same time providing additional data service...one principle behind the placement of CCAD-NET-DCS base sites.

The present inventions cellular and PCS components of the macro, mini, micro, pico and *portable* nano base sites are designed to provide from one omni directional to three directional analog or digital control channel, or digital access channel, or digital...

...variable burst application specific air interface messaging data protocols, that provide a full range of true throughput data rates from 4800bps to 64 Kbps for *mobile* and stationary application specific data services.

The present invention provides a two way text messaging apparatus that utilizes the inventions unique cellular and PCS, analog...networks is envisioned or needed.

Communicator means and methods are also disclosed, there is also provided a specialized data packet multi-mode CCAD-NET-DCS *mobile* and stationary communications apparatus. This apparatus can operate within a normal cellular, PCS and wideband data network, by utilizing conventional forward and
reverse analog and...node wideband data; high density/low mobility networks that support high volumes of wireless computer file transfer between a personal computer or personal digital assistant (*PDA*). The present inventions
communications apparatus, and CCAD-NET-DCS mini-hub can support the bi directional transfer of large computer file transfer that require large s forward messaging protocol schemes in no way adversely impact, or disturb conventional cellular and PCS *mobile* user unit and base site voice or control channel wave forms, *mobile* switching center procedures, conventional forward or reverse control channel data protocols. In particular, the present inventions forward analog and digital control protocols are not detectable by conventional cellular *mobile* and stationary *mobile* phones and other devices. Even if the CCAD-NET-DCS base site is placed in close proximity to a conventional cellular or PCS base site...

...and PCS communicators will not scan, and burst a conventional control channel packet to
the CCAD-NET-DCS control channels. Conversely, the CCAD-NET-DCS *mobile* or stationary communicator will not scan and burst its specialized CCADNET-DCS reverse analog or digital control channel application data packet to a
conventional cellular...

...standard IS-4113, and IS-41 C signaling protocols and procedures, completely embodied in the
present inventions MCMS-Teleport, CCAD-NET-DCS base site, and *mobile* and
stationary applications specific multi-mode communications apparatus. It is envisioned that a variant of the CCAD-NET-DCS base site is configured as a *portable* base site that is battery or solar powered, and can be hand carried and placed into service in a matter of minutes. It is further envisioned that the CCAD

NET-DCS *portable* base site can be used for remote *mobile* and stationary
communications operations focused on commercial, police and military applications, such as personnel, troop movement coordination and motor vehicle tracking and management.

A primary...

...of the present invention is to provide a method and apparatus for use on wireless terrestrial networks, such as cellular, PCS and fixed point and *mobile* communications satellite networks, where the CCAD-NET
DCS virtual network overlay allows for increased capacity, performance, flexibility and function, without impacting the normal or conventional... protocol known in the art today.

It is an object of the invention to provide a multi-mode application specific communications apparatus that will enable *mobile* and stationary
application devices to communicate with the present inventions MCMS-Teleport Hub while using any one or combinations thereof that are widely known cellular...

...invention to provide both a means and method for Internet World Wide Web (WWW) access over cellular, PCS, wideband data, fixed point satellite networks and *mobile* satellite networks utilizing CCAD
NET-DCS base site, communicator apparatuses and MCMS-Teleport hub system. There is provided a CCAD-NET-DCS nano cell base...

...VSAT based networks; combined with wideband Metrocom high density low mobility networks. That, the present invention is the first to create and combine a fully *mobile*, low density
applications specific short packet control channel based communications medium
with a high density low mobility network, whereby complete co system integration is achieved...WEB TV equipped television monitor, CCAD-NET WEB TV base site, CCAD-NET-DCS communicator, or a CCAD-NET-WEB TV equipped personal digital assistant (*PDA*); and retrieve a graphic display snap shot still image, of the immediate location of a land based motor vehicle, person or object; an aircraft, or...

...county, or other geographic location. This snap shot is graphically displayed on the inventions CCAD-NET-VVEB TV configured television monitor, communicator LCD display, or *PDA* or personal computer multi color video display.
It is another object of the present invention to provide the means and apparatus to create a CCAD...

...CCAD-NET cable television/broadband CATV/MATV base site that communicates with a CCAD-NET-DCS communicator, and a specialized CCAD-NET personal digital assistant (*PDA*), that enables multi protocol and multi mode communications via international cordless telephone means and methods integrated with the present inventions control channel, SS7 network, internet...specialized ERAAM packet with C-word
removed, and another H word attached, according to the invention.

Fig. 14 is a frontal view illustration of the *handheld* CCAD-NET-DCS GPS based, two way messaging personnel management communications apparatus, according to the invention.

Fig. 15 is a schematic of the *portable* CCAD-NET-DCS base site according to the invention.

Fig. 16 is an illustration of the *mobile* CCAD-NET-DCS base site

according to the invention.
Fig. 17 is a block diagram of the *portable* and *mobile* CCAD-NET-DCS base site automatic cellular and PCS carrier and channel detect protocol, according to the invention.

Fig. 18 is an illustration of the CCAD-NET-DCS cellular, cordless telephone and broadband/WEB TV multi function nano multi fimction base site and *PDA*, according to the invention.

Fig. 19 is a schematic diagram of the CCAD-NET-DCS MCMS Teleport Hub system and other essential network elements, according...

...CCAD-NET-DCS multi platform mesh node micro network multi pathway backbone, according to the invention.

Fig. 25, depicts the CCAD-NET-DCS multi protocol *PDA*, according to the invention.

Fig. 26, depicts the CCAD-NET-DCS TV base site television set as messaging medium, according to the invention.

DETAILED DESCRIPTION via a specialized MCMS Teleport data management hub; that controls and communicates with a unique low density, highly *mobile* application CCAD-NET-DCS base site node, and or control and communicates with a unique high density, non *mobile* application CCAD-NETDCS multi platform base site node, and or communicates and controls with a specialized CCAD-NET-DCS base site node that is capable of supporting *mobile* and stationary cellular and PCS specialized application specific control channel communications and specialized non *mobile* wideband data computer data file transfer communications. The present invention can operate within the means and methods of DAMA mesh topological internode communication schemes, and...

...CCAD-SAT cell base site; whereby hardware, firmware and software means provide; synchronous and asynchronous data protocols, and protocol conversion procedures, with fixed point and *mobile* satellite; HEO, MEO, LEO, polar orbit, inclined orbit, geosynchronous, bent pipe, transponder, satellite switched data (SSD), DAMA protocols, PAMA circuit protocols, CDMA spread spectrum multiple...base site multi-processing system II 7 as depicted in Fig. 8. This particular ERAAM packet is designed to operate in accord with the American *Mobile* Phone (AMPS), Total Access Communication System (TACS) analog cellular standard. Referring to Fig. 1, the multi-processor input 144 receives the ERAAM, attached a unique...or packet bundle, it is processed in accord with the operational parameters established that particular application such as; two way paging, global positioning based fleet *management*, *point*-of-sales, asset tracking, utility meter reading, wide band data computer file transfer, et. al.. The application provider, or facilitator prepares via firmware, software and...or a GPS personal management communicator, or a debit prepay cellular/ PCS handset, or a GPS based home arrest communicator, or a personal digital assistant (*PDA*) based communicator. The application specific communicator 1 00 can operate within a wide range of analog and digital cellular and PCS standards and assigned frequencies from 450 MHz to the 2 GHz range 372. There is provided an application specific personal digital assistant (*PDA*) 554, that transmits, receives and processes microburst ERAAM and EXRAAM application specific data packets, variable burst remote access application messaging (VBURST) packets within conventional cellular...

...data networks, or via the inventions specialized digital control and traffic channels that an integral component of the CCAD-NET-DCS base site. The same *PDA* 554 can also transmit and receive wideband computer data files, large data bit graphic files, video image file transfers. Referring to Fig. 25, the CCAD-NET-DCS

PDA 554 is configured to perform many multi mode functions. In this particular example, the *PDA* 554 has a split personality, part cellular or PCS handset 589x it has all the conventional controls and display 592. However the entire unit opens...

...that the back of the handset 5 8 9y encloses a proportionately large liquid crystal display (LCD) 593. The other half or bottom of the *PDA* 554x contains controls that perform the same functions as a computer keyboard with additional duplicate cellular or PCS handset controls. The functions are well known to those whom practice the art, therefore a detailed
description is deemed necessary. The LCD display 593, reveals some menu driven choices that the *PDA* can perform upon man machine interface intervention or by automatically derived operations via fin-nware and software programming means, exponentially expressed within automatically controlled command and status response events. For example this particular *PDA* is able to send and receive Microburst control channel data messaging 5 6 1, and extended microburst messaging system (EMS) 562, also known as variable burst remote
access application message (VBURST). This *PDA* can also send and receive wideband data messages 563, also known as Macroburst Application Specific (MAS) messaging system. This *PDA* is enabled to send and receive CCAD-NET
TV interface messages and service related instructions; such the inventions
CCAD-NET-WEB TV GPS location services...In fact, while comparing the present inventions means and methodology with envisioned PCS satellites such as the Iridium network, the Teledesic network, Globalstar, the American *Mobile* Satellite Communications network (AMSC), and others. These networks, at best will only provide data rates of 5kbps. The networks are based
upon marginal geo synchronous satellite networks, low earth orbit (LEO), medium earth orbit (MEO) and others. These networks envision *handheld* units
that communicate directly ...dollars a minute for voice and data services with rates of only 5kbps.

In addition, there are no plans to provide low cost application specific *mobile* and stationary communications services. The present invention clearly provides
profound advantages over these aforementioned services. The CCAD-NET-DCS network can provide cellular and PCS...

...communicates with a conventional cellular and or PCS base site IO 1 as depicted
in Fig. 6., which in turn communicates with the currently serving *mobile*
switching center (MSC) 535. Additionally, this same GPS based communicator
100c communicates with the CCAD-NET-DCS base site 102, when traveling within the effective...four word message therefore provides a 15 character message that can contain GPS receiver instructions, a forward page message, email indicators, utility meter remote control, *vending* *machine* inventory reports, home arrest communicator and associated wrist band status, and a host of many other variations on this configuration. In fact, including word one...public switched telephone network. In still another scenario, the forward message request can originate from the present inventions CCAD-WEB TV television monitor 517, the *PDA* 554, as depicted in Fig. 18, and other specially configured apparatuses such as a *portable*
personalcomputer. ThemessagedeliverymediumcanbeacellularbasedIS-136 DCCH forward messaging service, an IS-95 CDMA forward messaging service, an upbanded CDMA forward messaging service, an upbanded TDMA forward messaging...

...this code does not allows for conventional dialed number PSTN access. Therefore, the CIN acts only as an identification and routing number. The

communicator or *PDA* cannot be accessed from a conventional landline telephone. The C word contains the eight character CCAD serial number (CSN) 136. In some CCAD related applications, this number is used to identify the present inventions application specific communicator or personal digital assistant (*PDA*), especially if the communicator is configured for cellular or PCS voice service authentication, and authorization. Still in other derivative applications, the CIN is solely used for CCAD communicator or *PDA* identification. In some applications the CIN is permanently embedded via hardware and firmware means, in the same secure manner as conventional cellular and PCS electronic...the art, so specific references to this conventional procedure are omitted. Broadly, the remote feature access causes specialized routing to occur when the currently serving *mobile* switching center (MSC), receives an origination packet; which is indicated by the order qualifier code ORDQ 134, and the order code ORDER 13 5, containing...base site 102 and other virtual network elements, or it can operate with a conventional cellular or PC S base site 1 0 1, and
mobile switching center (MSC) 535. As heretofore described, the EXRAAM packet as depicted in Fig. 7 and ERAAM packet depicted in Fig. 13, can operate in...is relayed to the inventions MCMS Teleport Hub 106, via the currently serving SS7 network 262. The packet is converted to SS7 compatible TCAP and *mobile* application part (MAP) intersignaling protocols by the MSC 535, relayed to the nearest serving signaling transfer point (STP) 109. The STP is a dynamically managed...

...and H[2] word 132 as depicted in Fig. 7. In this instance, the two words contain a directory number that a landline telephone or *mobile* phone user dialed, and entered his ten digit directory number. The area code or NPA '408' 425, contained in H[2] word 132. The NXX...caller I.D. services. The
invention extends this feature to include alpha numeric messaging, that originated from one of the invention application specific communicators and *PDA*. When a calling party's number is sent to a designated telephone instrument that has the capability of displaying the calling party's telephone number...base site will support any designated communicator such as the personnel management communicator I 00c that uses
Microburst and Vburst data protocols, and the CCAD *PDA* 554 that uses Microburst, Vburst and Macroburst bi directional data protocols. The *PDA* 554 also may operate in conventional cellular and PCS network base sites IO 1, *mobile*
switching centers (MSC) 535, and SS7 networks 262, in the aforementioned means and methodology. The *PDA* can be configured to transmit and receive
Microburst 561, Vburst 562, utilizing from 450 Mhz to 2Ghz cellular and PCS frequencies 372 that transport the...much is the same way that conventional electronic serial (ESN) are
embedded in cellular and PCS communicators and handsets. Because conventional cellular and PCS network *mobile* switching center (MSC) translation tables data bases processes data in certain hierarchical means and methods, the ERAAM data words are specially arranged to completely conform...computer file data packets.

Referring to Fig. 14, Fig. 18, and Fig. 25. The personnel management communicator I 00c depicted in Fig. 14, and the *PDA* 5 5 4 depicted in Fig. 1 8, and
Fig. 25 are configured to collect, process and transmit complete global positioning (GPS) data utilizing specialized Microburst, Vburst, and Macroburst protocols. These application specific protocols can operate within cellular, PCS,
mobile satellite, wideband data and cordless telephone FDD and TDD air interface frequencies and protocol standards. Referring to Fig. 7, and ...satellite compatible base sites. When an application packet containing GPS data and or other location based data is transmitted from an application specific stationary or *mobile* communicator and
or *PDA* communicator, and processed through a conventional network or

the
inventions CCAD-NET-DCS virtual network, the same packet processing and packet delivery procedures apply.

Referring...

...terminal 167, it distributes
the data to the appropriate data base. The GPS data packet can originate from personal management communicator 100c, or the inventions *PDA* 554. The GPS data packet can be received by the inventions cell/sat CCAD-NET-DCS base site 102, relayed to geo synchronous satellite 107... GPS packet can also originate from a conventional cellular or PCS network, represented here by a conventional cellular or PCS base site IO 1 and *mobile* switching center (MSQ 535 located in New York City. For example, this conventional network might by operated by Bell Atlantic Nynex, Airtouch Communications, or any...

...HMS). This network supports; all Microburst, Vburst and Macroburst data packet protocols. Each one of the base site nodes 'a' through 'o' support the inventions *PDA* 554, and all the inventions application specific stationary or *mobile* communicators 549. For example, if a *mobile* based GPS communicator travels in this network and transmits to node 'in,' node 'in' then relays the GPS packet to all other nodes depicted here...

...Teleport Hun 106 where it is processed in accord with the heretofore mentioned processes and procedures. The GPS data packet can originate from the inventions *PDA* 554 and is processed in essentially the same manner. The inventions HMS network can be manage by a CCAD-NET-DCS Mini Hub 543. This...

...hub maintains authentication data
bases, counts data packets, and controls packet routing. For example, an application specific communicator 549 can transmit a packet to a *PDA* 554, without the need of the transaction being sent to and ...time, and internet capacity. The mini hub 543, also transmits packets sent from PDAs 554 and application specific communicators 549, that are intended for other *PDA* and communicators operating in other HMS networks, conventional cellular and PCS networks, and CCAD-NET-DCS base site elements that are operating in remote areas...

...passenger jet liner 5 09, or an ocean going ship 5 1 0. A nano base site 51 1j, application specific communicator 100j and a *PDA* 554j can operate in a specialized means and method, can operate on a commercial jet liner.

A user may want to communicate to another user, or an applications provider located on the ground. If so the invention provides for cellular, PCS or *mobile* satellite data protocols that will operate on conventional Airphone cellular or PCS frequencies that are allocated by the FCC. The control channel, and digital access...

...methods and means. The invention can provide effective anti bombing means and methods. Because the present inventions data protocols adhere to conventional cellular, PCS, and *mobile* satellite protocols; unconventionalemergency data packet transmissions will not be detected and deciphered by terrorist groups, for the conventional operations of Airphone cellular and PCS
networks...cellular and PCS networks are configured.

The invention provides unique application specific services for the Livery Industry, in that a nano base site 51 1k, *PDA* 554K and application specific communicator I OR can be installed in a limousine 63 0. This system provides everything from the inventions debit prepay voice ...

...it provides for air craft. An ocean going ship can be configured to

utilize a nano base site 51 1h, a mini hub 543b and *PDA* 554h and application specific communicator I 00h. This system can be configured to support the heretofore mentioned commercial application specific communicator and *PDA* communications. The ship can also send GPS packet data, via inventions *mobile*
and Maritime satellite protocols, such as INMARSAT, Teledesic, Iridium, Globalstar, and AMSC satellite networks. The inventions Maritime applications include but are not limited to off...to add additional application specific data service capacity, a separate CCAD geo synchronous satellite communication based virtual network, a CCAD mesh node wideband data hybrid *mobile* and stationary services network, a *mobile* satellite network, and others; a forward message is sent to the motor vehicle that causes it to respond with the
heretofore mentioned GPS data packet...means 614, as depicted in Fig. 18.

In Fig. 18, the CCAD-NET-GATEWAY 555b is configured as a set top box base site. Alternatively, *PDA* 554 can become a remote control device that
can communicate with the CMS over the DBS network, thereby obviating the requirement of a set top...NET server system can periodically send location update images and image waiting indicators to the users personal computer, CCAD-NET TV console, or specially configured *PDA*.

Referring to Fig. 25, the *PDA* 554, can be configured to receive the inventions snap shot images via the inventions Vburst data packets, and mesh node wideband data packets. These packets...

...images require relatively large amounts of data. However, the inventions relative location snap shots can easily transmitted to the inventions PDAs, via cellular, PCS and *mobile* satellite based forward traffic channels. For example, a user can be operating in any of the heretofore mentioned CCAD-NETDCS networks, send a location request and receive the inventions relative location snap shot mapping image, by selecting CCADNET TV services 587 on his *PDA* 554 screens 593 GUI menu selection. This operates similarly to how the CCAD-NET TV console and monitor user retrieves relative location information.

Referring to...building of a package transfer depot. By combining a package carrier's conventional tracking software, and logistical management software, with the inventions heretofore described GPS *mobile* location system, a new package management system is created. This system is immediately accessible to any user that interfaced with the present inventions CCAD-NET...

...or a stored predetermined message can be sent. The user can also send just a numeric message or page to the application specific communicator or *PDA* user. The messages are sent to the inventions MCMS Teleport Hub via the internet, and forwarded to the currently serving CCADNET-DCS network area via...

...be interfaced via the heretofore disclosed
image transfer means and the CCTV security camera image can be sent to a remote personal computer, the inventions *PDA*, or the inventions CCAD-NET
TV console and monitor, or to an application provider such as a private or public law enforcement agency.

Image Mail...

...consoles to locate home arrest
subjects, and keep ways. A parole officer, probation officer or other law enforcement officer can be equipped with the inventions *PDA* to locate a home arrest sub.ect, by simply transmitting a snap shot request to the currently serving CCAD-NET-DCS network, and having that network respond sending the relative location snap shot image or text message to the *PDA* to either show or spell out in text form a home arrest subject's current location.

Referring to Fig. 18, a person's home 505...displayed on the users, or message callers conventional TV screen without modifying the TV or the host cable television network.

The invention provides for specialized *portable* and motor vehicle mounted base site configurations. These specialized base site configurations can be used by police and military organizations. Referring to Fig. 15 and...

...19, there is provided CCAD-SAT based nano base site 375, and 375b. In Fig. 15, the nano base site 375b is configured for specialized *mobile* applications. It is equipped with a fold out satellite antenna array 376, a solar electric panel 106, and carrying handle 3 81 and a telescopic...

...or digital control channel sector antenna. This single sector base site can be configured to operate with all known cellular and OCS frequencies 372. This *portable* base site can operate in geographic areas where conventional cellular or PCS service does not exist, or where it does exist. This base site 375b, can be set up easily. Once it is physically set up, its specialized electronics come into play.

Referring to Fig. 17, the inventions *portable* base has an LCD display 382.

The display provides user interface to menu driven controls, via a PC type command prompt 3 8 3. The display also provides a solar power and battery level indicator 3 8 5.

After the *portable* base site is set up, and the telescopic antenna is extended the following automatic procedures occur. The base site scans all relevant radio frequencies, and...

...and forward application specific messaging transmissions 500. Once the base site detects the presence of the inventions application specific communicator(s) I 00 or a *PDA* 354, it then transmits received VSAT network originated messages 501. The base site then can also receive CCAD-NET-DCS messages and convert them for...

...motor vehicle such as this depicted van 378. There is provided a single or multiple sector cell 377. This system operates exactly like the disclosed *portable* base site. Both the *portable* base site and motor vehicle mounted base site can support data rates of up to 155 Mbps 567 when transmitting packets and packet bundles to...

...This high data rate can be used with conventional Ku band uplink frequencies 374 and downlink frequencies 373.

While the inventions application specific communicators and *PDA* cannot support 155 Mbps data rates, these same base sites can be configured to provide specialized network to network data links.

Referring to Fig. 20...

Claim

I A method for communicating messages between a communicator and a central monitoring station over a *mobile* communications network that includes a voice channel and a control channel, wherein the voice channel conveys data messages and the control channel conveys control messages... central monitoring station in response to detecting the remote feature control request comprises the steps of detecting the remote feature control request at a cellular *mobile* radio switching center and forwarding the remote feature control request and the encoded message over at least one inter cellular serving area link between the cellular *mobile* radio switching center and the central monitoring station in response to detecting the remote feature control request.

11 The method of claim 1 0, wherein the inter cellular serving area link between the cellular *mobile* radio switching center and the central monitoring station operates according to the signaling system 7 (SS7) protocol standard.

12 A method for communicating messages between a cellular *mobile* radio (CMR) communications device and a central monitoring device over a communications network that includes wireless digital traffic channels, satellite communication channels, and inter cellular...

...of digits from the
CMR communications device to a base station over the control channel, bypassing the voice channels, the call origination message specifying a *mobile*
identification number (MIN) identifying the CMR communications device;
d) transmitting the call origination message and the sequence of digits from the
base site to the...TDMA) digital broadcast control channel.

20 The method of claim 19, wherein the TDMA digital broadcast control channel operates in accordance with global system for *mobile* communications (GSM) standards.

21 The method of claim 12, wherein the message comprises a response to an instruction received at the CMR communications device from...step of receiving the message comprising receiving tracking data.

26 The method of claim 22, wherein the step of encoding the message comprises manipulating a *Mobile* Identification Number (MIN) of the communicator to include the message.
27 The method of claim 22, fin-ther comprising:
receiving the message as encoded over...

...channel at the central
monitoring station; and
decoding the message.

28 The method of claim 27, wherein step of encoding the message comprises manipulating a *Mobile* Identification Number (MIN) of the communicator to include the message, and wherein the step of transmitting the message comprises transmitting the MIN as manipulated.

29...
?t s21/3,k/8

21/3,K/8 (Item 6 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00411544
VARIABLE BURST REMOTE ACCESS APPLICATION MESSAGING METHOD AND APPARATUS
DISPOSITIF ET PROCEDE DE MESSAGERIE PRESENTANT UN ACCES CONTINU VARIABLE A DISTANCE
Patent Applicant/Assignee:
AERIS COMMUNICATIONS INC,
LA DUE Christoph,
Inventor(s):
LA DUE Christoph,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9802004 A2 19980115
Application: WO 97US16176 19970710 (PCT/WO US9716176)
Priority Application: US 9621516 19960710; US 96696250 19960813
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AL AM AT AT AU AZ BA BB BG BR BY CA CH CN CU CZ CZ DE DE DK DK EE EE ES FI FI GB GE GH HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK

MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SK SL TJ TM TR TT UA UG US UZ
VN YU ZW GH KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH DE
DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE
SN TD TG
Publication Language: English
Fulltext Word Count: 26317

Fulltext Availability:
Detailed Description
Claims

English Abstract
A method and apparatus for full-duplex data communication in or for a wireless communications network, such as a cellular network, PCS network, or *mobile* satellite network, where a remote feature access control operation utilizes a switch to reserve and route selected voice channels or traffic channels in response to the remote feature access control operation. The method comprising the steps of: configuring a *mobile* switching center (MCS) (104) to route the selected voice channels (506) to a multi-port protocol converter (351) (MPPC) for transmitting a selected data message...

French Abstract
...dans un reseau de telecommunications ou pour ledit reseau, tel qu'un reseau cellulaire, un reseau de systemes personnels de communication (PCS) ou un reseau *mobile* par satellite, dans lequel une operation de commande d'acces a distance met en application un commutateur afin de reserver et d'acheminer des canaux vocaux ou des voies de trafic selectionnes en reaction a ladite operation. Ce procede consiste a elaborer la configuration d'un centre de commutation *mobile* (MSC) afin d'acheminer les canaux vocaux selectionnes vers un convertisseur de protocole a acces multiples (MPPC) servant a transmettre un message de donnees selectionne...

Detailed Description
... receiving wireless data messages. More specifically, the invention relates to data transmission methodologies and apparatuses for data messaging on wireless communications networks such as Cellular *Mobile* Telephone (CMT),Personal Communication Systems (PCS), Global System for *Mobile* (GSM), and *mobile* satellite networks such as Iridium Satellite and Teledisc Satellite communications networks.

2. Description of Related Art
A variety of methods and apparatuses have been proposed...

...invention provides a method for greatly increasing the capacity, performance, coverage, and delivery of data messages over wireless communications networks such as cellular, PCS, and *mobile* satellite. The present invention utilizes a variable burst remote access application messaging (VBRAAM) method and apparatus to seamlessly, and in an essentially transparent manner to 977 for transmitting data messages over control channels, for monitoring, control, and communication with various *mobile* and/or stationary apparatuses, two-way paging applications, vehicle tracking, and the like. Other patent filings by the present inventor disclose a remote access application...
...to the instant disclosure are patent applications filed by the present inventor for voice and data debit billing methods and apparatuses for cellular, PCS, and *mobile* satellite.

Examples of such filings are U.S. Patent Application Serial Nos. 08/619,363 and 08/619,960. The present method and apparatus for...

...networks allowing for two-way data messaging, paging, text communication for short messaging, file transfer and Internet access over cellular, personal communications systems (PCS), and *mobile* satellite networks.

Examples of wireless communications networks allowing for two-way

communications include cellular *mobile* radiotelephone (CMR), which is linked to the public switched telephone network (PSTN) and allows for communications between two *mobile* radiotelephone users or between a *mobile* radiotelephone user and a conventional phone. Conventional CMR networks feature a radio coverage area divided into smaller coverage areas or "cells" using power transmitters and...June 1 1, 1996, where a data messaging method and apparatus are disclosed for data messaging on a CMR paging network using the manipulation of *mobile* identification numbers (MIN) and electronic serial numbers (ESN) to send a message over the control channels. A related disclosure, PCT International Patent Application WO 95 0 The disclosed method and apparatus may also be used with *mobile* satellite wireless networks, and acts as a public-land-*mobile*-overlay (PLMN) when signaling systems such as signaling system seven (SS7), IS-41, CITT Blue Book and Red Book 56 kbps, and 64 bps automatic...

...IS-TDMA, IS-95 CDMA dual mode cellular, and the like. Other networks where the present method and apparatus are applicable include Global System for *Mobile* (GSM), DCT- 1 800, DCT 1900, Personal Digit Cellular (PDC), Digital European Cordless Telephone, Personal Handy Phone System (PHS), Cordless Telephone Systems (CTS), and the...

...apparatus is a true full-duplex technology, and functions as a national or international system footprint which is essentially invisible to the cellular, PCS or *mobile* satellite operator. The VBRAAM method does not require any hardware infrastructure changes to existing cellular, PCS and *mobile* satellite networks. The disclosed method and apparatus allows for two-way data messaging, paging, text communications, real-time metered billings, file transfer, Internet access via cellular, PCS or *mobile* satellite, and a wide range of other data messaging and remote application and control functions of both stationary and *mobile* objects.
SUMMARY OF THE INVENTION
Accordingly a method for full-duplex data communication in or for a wireless communications network is provided, where a remote...

...means to reserve and route selected voice channels or traffic channels in response to the remote feature access control operation, the method comprising: configuring a *mobile* switching center (MSC) to route the selected voice channels to a multi-port protocol converter (MPPC) for transmitting a selected data message on the selected...

...communications network. This variable burst remote access application messaging (VBRAAM) methodology may 1 5 be utilized on wireless communications networks, such as cellular, PCS, or *mobile* satellite.

The selected data message used in the disclosed methodology preferably includes a selected dialed digit stream for communication over the wireless communications network and from the MSC.

The remote feature access control operation is preferably a standard IS-41 feature that allows a *mobile* user to manually enter call routing instructions to a home location register (HLR).
Once received, the HLR causes all of the user's *mobile* or land calls to be routed to another destination. Message waiting indicators may be sent back to the user via the SS7 network to the current serving network, and then telayed to the *mobile* phone user via forward channels or reverse voice channels, traffic channels, or control channels. The present invention utilizes the remote access feature control parameter quite...

...module routing ports. For example, during a remote feature access control operation, a currently serving switch reserves and routes a forward voice channel to the *mobile* unit that has activated the remote feature access control operation. The switch also routes the assigned voice or traffic channel to a sound card or...

...a voice recording that instructs the user about the status of that

particular remote feature access control operation request. Such aforementioned events do not cause *mobile* switching center billing systems to cause a billable event. Therefore, under current operating standards, the remote feature access control operation is not a billable event...

...the present invention MPPC. The MPPC functions as a data protocol converter and data processing terminal that is 1 5 preferably rack mounted at the *mobile* switching center (MSC). The MPPC unit may also function as a point-of-presence (POP) on the Internet world wide web (WVAV). Software and hardware...the VBRAAM communicator detects the tail bits, the communicator then terminates the message call, the currently serving base site performs call-teardown procedures, and the *mobile* switching center (MSC) completes the VBRAAM event.

A wide variety of data messages may be transmitted using the disclosed methodology.

Examples include global broadcast messages, user group messages, point-to-point, point-to-omni 1 0 point, land-to-*mobile*, and *mobile* messages may be sent in this unique and cost-effective manner.

For example, a VBRAAM user can send a message from his communicator or phone...

...business users whom are in the same pre-programmed user group, even if each designated user is 1 5 operating in different cellular, PCS, or *mobile* satellite markets.

The VBRAAM methodology and apparatus can provide variable length text messages, 41pha-numeric messages, encoded debit phone control messages in various data word...alert, anti-fraud, anti-cloning, and numerous other selected data messaging communications. The length of the message depends upon the currently serving cellular, PCS, or *mobile* satellite's air interface protocol, and how the remote feature access control operations procedures are programmed. The VBRAAM messaging system is platform independent, and do...

...data communication, debit phone authentication, call and data message activity management, automatic roaming, and other such features. The VBRAAM communicator may also be assigned a *mobile* identification number (MrN) and electronic serial number (ESN) for local cellular market land-to-*mobile* and *mobile* access. This MIN and ESN can be restricted to a designated local market or allowed to roam, depending on the wireless communications network and particular...remote feature access control operation. The method may utilize remote feature access control operation of an IS41 remote feature control operation to communicate to a *mobile* switching center (MSC), and one or more translation tables to route the selected voice channel to a signaling unit.

Means for transmitting data messages on...
...wireless communications network; and means for transmitting a selected data message on the wireless communications network in response to receiving the data message from the *mobile* switching center (MSC).

Accordingly, a primary objective of the present invention is to provide a method and apparatus for use on wireless communications networks, such as cellular, PCS, and *mobile* satellite, enabling MI-duplex communication thereby increasing capacity, performance, coverage, and ftmctionality of the wireless communications network.

It is an object of the invention to...

...It is an object of the invention to provide both a means and method for real-time metered billing for use in landline, cellular, PCS, *mobile* satellite, and other wireless communications networks.

1 5 It is an object of the invention to provide both a means and method for preventing fraud...

...communications network.

It is also an object of the invention to provide both a means and method for Internet WWW access over cellular, PCS, and *mobile* satellite networks.

Additional objects and advantages of the invention will be set forth in part in the description which follows, and in part will ...the I 0 invention.

Fig. IO shows a communicator apparatus, according to the invention Fig. I I shows an embodiment of a personal digital assistant (*PDA*) keypad operably linked 1 5 to communicator I 00, according to the invention.

Fig. 12 shows the VBRAAM fall-duplex variable messaging RSE request data ...voice channels or traffic channels in response to the remote feature access control operation. The method, in a preferred embodiment, 1 5 comprises configuring a *mobile* switching center (MSQ to route the selected voice channels to a multi-port protocol converter (MPPC) for transmitting a selected data message on the selected may be provided configured for communication over a wireless communications network as, for example, a *mobile* phone, a pager, a phone configured for real-time metered billing and debit messaging and tracking (DEBIT), a meter reader, a communicator for monitoring and control of remote stationary devices, a communicator for monitoring and control of remote *mobile* devices, and the like. The communicator referably comprises: means for data communication in or for a wireless communications network where a remote feature access control...

...wireless communications network; and means for transmitting a selected data message on the wireless communications network in response to receiving the data message from a *mobile* switching center (MSQ. The communicator is further characterized in that the means for data communication on the wireless communications network includes means for transmitting, receiving...

...the VBRAAM methodology are shown. The VBRAAM method may be used in or for a wireless communication network such as a cellular network, PCS, or *mobile* satellite wireless communications network, where a remote feature access control operation, which is a conventional remote feature access control operation in such network, utilizes switch...

...channels 502 in response to the remote feature access control operation. The preferred method comprises the following steps shown in Fig. 1. First, configuring a *mobile* switching center (MSC) 104 to route selected voice channels 506 to a multi-port protocol converter (MPPQ for transmitting a selected data message 504 on...In Fig. IA, a VBRAAM full-duplex messaging pathway and apparatuses are shown, and as previously mentioned, may be applied to any cellular, PCS, or *mobile* satellite wireless communications network. The VBRAAM communicator 100, which may be configured as a
- WO 98/02004 15 . . PCTfUS97/16176
mobile cellular phone, pager, PCS communicator device, Personal Digital Assistant (*PDA*) device, or the like, sends and receives data messages, such as selected data message 504 on the selected voice or traffic channels 506 and the...

...messaging channel 512 as described, and collectively designated as full-duplex air interface 476. A base site 1 0 1 communicates with the currently serving *mobile* switching center (MSC) 104 and processes and distributes the selected data message 504 via the VBRAAM method detailed in reference to Fig. 1. The MPPC...configured for air interface downlink protocols such as broadcast paging forward messaging 478, broadcast

control channel forward messaging 479, as detailed in Global System for *Mobile* (GSM) standards, digital control channel forward messaging 480 as specified in interim standard
PCTfUS97/16176
- WO 98/02004 16
136 (IS- 1 3 6), *mobile* satellite forward messaging 477, as specified in Inmarsat P, Teledisic, Iridiurn and other satellite networks, GSM forward traffic and forward signaling channels 483, analog forward...

...specific applications 484 to 498.

Such application-specific applications such as 484 to 498 include two-way paging, metered billing and debit related data transfer, *PDA*, home arrest, wireless gaming and/or gambling, stationary remote control, and the other shown applications. MPPC 351 is configured to convert any data message it...

...convert a message received from a personal computer (PC) 431 that is a point of presence on the WWW 352, into any cellular, PCS, or *mobile* satellite signaling and air interface protocols and deliver the selected data message to communicator I 00. The VBRAAM methodology creates in this manner a multi...to Fig. IC, communicator I 00, which may be any communicator device for use in or for a wireless communications network, and configured as a *mobile* phone, a pager, a debit phone (DEBIT), which is a cellular phone configured for metered real-time billing and debit transactions, a personal communication services PCS device, a Personal Digital Apparatus (*PDA*), a stationary device, a *mobile* device control apparatus, or other communicator device operable on a wireless communications network. In this example, the communicator either receives or transmits 219 a selected...

...DCCH pathways of a host cellular network configured for forward messaging specified in Interim Standard IS-95, forward DCCH messages from a Global System for *Mobile* (GSM) signaling and/or authentication channel, or messages sent via the present invention VBRAAM messaging data channel 512.

Communicator I 00 preferably receives and translates...

...response 278 is initiated. In a preferred method, communicator I 00 scans and detects forward downlink network channels of host-serving cellular, PCS, GSM, or *mobile* satellite system 279. Next, communicator I 00 engages with forward network channel 280. Preferably, the communicator I 00 then is assigned and synchronized with a...a credit monitoring company, a debit bank center, a stationary device control and monitoring center for meter reading or remote environmental monitoring, for example, a *mobile* device control and monitoring center for tracking vehicles, ships, material flow, packages, or other applications as in 484-498 in Fig. 1 B. The MCMS...
...I 0 (MC) is shown having received 356 data message 504 from an application-specific bearer/facilitator such as a stationary device monitoring facilitator, a *mobile* device monitoring facilitator, debit bank center 120 as shown in Fig. 2, or the like, via the public switched telephone network (PSTN) I 00 and...and displayed 383 to the communicator user.

PCTfUS97/16176 In Fig. I E, communicator I 00 may be configured and used for personal digital assistant (*PDA*) type applications. For example, communicator I 00, in a *PDA* mode of operation, prepares to transmit 453, a data message 454, text message 455, fax document 456, e-mail 457, computer file 458, or other...message to its designated destination.

With reference now to Fig. 2, principal functional elements of a wireless communications networks such as a cellular, PCS, or *mobile* satellite network are shown communicating using the full-duplex VBRAAM methodology. In the example, the VBRAAM communicator I 00 transmits 103 a control channel application...

...the special ten-digit CCAD identification number (CIN) 264 that is included in the A word 125 and B word 133, causes the currently serving *mobile* switching center (MSQ to recognize the received packet as a VBRAAM RSE packet and then route the packet to the CCAD HLR 162 via the ...

...may cause a VBRAAM selected data message 103, to be sent for various purposes, such as two-way communication, paging, control of a stationary or *mobile* device, remote monitoring, and the like. However, for a great majority of VBRAAM data message packet transmission events, communicator I 00 is programmed to automatically direct registration status event (RSE) response packets to be transmitted to the nearest serving cellular or PCS base site IO 1. or to a *mobile* satellite. in this example an Irunarsat P *mobile* satellite 114. Communicator 100, in one embodiment, is equipped with an integrated 900 MHz broadcast pager receiver. The pager receiver may receive alpha-numeric pages...

...that is communicatively linked to MCMS 106 via SS7 115, PSTN I 10, and TUDSO links 105. Communicator 100 may also be equipped with a *mobile* satellite transceiver that is configured for reception of hunarsat P signals. The signals can contain alpha-numeric messages, commands and anti-fraud multi-key encrypted...in Europe and Asia. In a metered billing or debit message embodiment, the method is preferably "added" to cellular and PCS networks, particularly at the *mobile* switching center (MSQ, and requires only about an hour of system programming time. The programming simply involves updating call treatment and routing parameter tables, and creating a new class of debit service, by assigning special *mobile* identification numbers (MIN) termed and previously described as CCAD Identification Numbers (CIN). The CIN is, in this embodiment, a ten-digit I 0 number that is used in the same way as the MIN, but it cannot be used to place a land-to-*mobile* call from the public switched telephone network (PSTN). The CIN may be used for data messaging for system management, user identification, and debit account updating...

...23 PCT/US97/16176 communicator I 00 provide a transparent overlay which increases network capacity, performance, and functionality when used with any cellular, PCS, or *mobile* satellite system that adheres to IS-41 operational specifications. Accordingly, the wireless communications network infrastructure does not need to be modified significantly in order to...the MCMS 106 that a particular message needs to be resent to the same user. For example, when communicator I 00 is operating in a *mobile* environment, the assigned forward message channel may drop the selected message during its transmission event. In such case, the user would typically not be charged...

...is equipped with a broadcast pager and the DPE event is a two-way paging response. The symbol LTMCR is interpreted as a land-to-*mobile* call request and interpreted as a land-to-*mobile* call completion. The symbol HM is interpreted as "hold messages do not send." The symbol NS24 listed below the digit 4 field is interpreted as...action in terms of service request and status response, are preferably deemed registration status events (RSE). However, to the currently serving cellular, PCS system, or *mobile* satellite network, the RSE is nothing more than a cellular phone user, for example, requesting remote feature access operation during a system access origination procedure...

...communicator I 00 always respond to a global action message registration increment, unless signaled to do so by the host carrier, whether cellular, PCS, or *mobile* satellite. Preferably, communicator I 00 is programmed to register with the MCMS HLR 162 every time a communicator user requests service via an RSE. This...to hold all received and stored messages until further notice.

If a communicator I 00 is used in a particular serving cellular, PC S or *mobile* satellite network, it is subject to VBRAAM forward global broadcast messages, unless the user elects not to receive a global

broadcast message. For example, a...

...403, which is selected data message, may be configured in any analog word block or digital multi-frame word format used in cellular, PCS or *mobile* satellite networks. For example, it may be configured as an FSK BCH 10 Kbps word, an IS- 1 36 TDMA multi-frame word, an IS-95 CDMA word, or a Global System for *Mobile* (GSM) TDMA word. The VBRAAM forward message word 403 is shown having a 50character message body 404, a nine-character message header 405, and a...

...location update commands and other pertinent automatic vehicle location data (VLD).

In another embodiment, communicator I 00 may be configured as a personal digital assistant (*PDA*) which may be provided with *PDA* keypad 157 as seen in Figs. IO and I 1, that allows the communicator user to send selected data messages to other communicator users with *PDA* configured communicators, Internet file transfer points (FTP), individual Internet users, and designated WEB sites. The VBRAAM-*PDA* user can access the Internet, send messages to other VBRAAM-*PDA* users, receive electronic mail, purchase products and services and the like. The possibilities are many and varied. Full duplex data message 403, which is a...

...one burst. If longer text messages are to be sent then multiple, sequential bursts of additional packets may be used, for example in a VBRAAM *PDA* application. The illustrated VBRAAM multi-word selected data message shown is based upon and resembles a standard origination data packet with enhanced dialing features. This this number ftom another *mobile* or from a landline phone could not reach the communicator I 00 user with the CIN number. 'Me CIN and CSN are used for metered...

...word 131 is preferably a conventionally configured origination packet, with the first word of called address used to send dialed digits entered by a conventional *mobile* phone user, for example. However, with the VBRAAM method, the D word is designated the applicationspecific H word one, or H[I] word 13 1...and is utilized by wireless communications network signaling and switch technicians to enter new data in call handling, number translation, parameter table, data files, etc.

Mobile identification number (MIN) data files are preferably used by the MSC to identify systems to which different MIN numbers belong. In the preferred VBRAAM methodology...the VBRAAM inherent anti-cloning and anti-fraud aspects. This anti-fraud methodology is important to the wireless communications network, such as cellular, PCS, or *mobile* satellite, to prevent unauthorized use of their network and to the communicator 100 user from fraudulent use of his or her account. In fact, the...

...present invention's MCMS as an on-line anti-fraud checkpoint. The disclosed VBRAAM anti-fraud features may be downloaded to various cellular, PCS, and *mobile* satellite I 0 phones at dealer point-of-sales. Once the MCMS and its unique data management protocols and messaging protocols are incorporated in a...

...two-way short messaging and other messaging functions described, which may be automatically applied and fully utilized by any participating 1 5 cellular, PCS, or *mobile* satellite carrier.

Conventional IS-41 and SS7 system requirements specify that an operating SS7 service control point (SCP), such as an HLR, must be redundant... frame relay link to the DBC. The DBC may be a bank, credit union, brokerage firm, I 0 etc., that can offer cellular, PCS, and *mobile* satellite debit services as an integral part of normal ATM, or credit card services such as the VISA corporation affinity user or normal registered merchant...MCNIS 106 may transmit messages to communicator 100 that are dual satellite and cellular compatible. The communicator I 00 can also receive messages from a *mobile* satellite, such as the Inmarsat P satellite I 1 4 depicted here, as long as communicator I 00 is

configured for such use. The MCMS...

...hub 109 transmits an uplink message, and then the satellite relays and transmits the message to communicator I 00.

A unique "caller pays" land-to-*mobile* call method may be implemented using VBRAAM methodology and communicator I 00. In this embodiment. the caller, using a landline telephone 1 1 3 in Fig. 2, places a call using a "900" number 153. The 900 number land-to-*mobile* call is routed to the MCMS 106. The D.?ICMS interrogates the CCAD HLR 162 to deterraine in which serving cellular, PCS, or *mobile* satellite network communicator I 00 is operating. Every time an MSC sends a origination/registration invoke request to any HLR, including the CCAD HLR, the...

...900- or 800-number charges are incurred by the caller. The communicator I 00 register/timer status has not been affected by this land-to-*mobile* call. No other calls can be placed to the debit phone user unless the PIN number is entered and the landline caller uses the 900...

...control point (SCP) on an IS-41/SS7 network. The VLR operates in many respects like an HLR. The VLR keeps records of all roaming *mobile* users actively operating in that particular serving network for a 24-hour period. Each roaming *mobile* user is assigned a temporary local directory number (TLDN) or pseudo (SUTTO) number, that is stored in, for example, the currently serving cellular system's...

...location register (VLR). This number is preferably used if any calls are received at the MSC that are designated as active roamers. When a roaming *mobile* user first registers in a serving MSC operations area, the home cellular or PCS system's HLR is interrogated in the same manner as heretofore described, If the *mobile* roamer's electronic serial number (ESN) and the *mobile* identification number (MIN) is sent to the home system HLR, and if the roamer's data files are present in the HLR and his account...

...SS7 network to the home HLR. Therefore, a current location of all active and registered users may be maintained. When, for example, a land-to-*mobile* "900" number is dialed by a landline PSTN caller II 3, the call is routed to the MCMS HLR 162, 171 via the MCMS autoinatic...and then transmitted to the DCCH equipped communicator I 00. A similar procedure applies if the communicator I 00 is equipped with an Inmarsat P *mobile* satellite receiver. In such an application, the MCMS 106 prepares a message for transmission to the satellite network control center (SNCC) 109, via the PSTN...also shown in operable relationship to one another. In operation and use, keypad 164 is preferably used only for dialing landline telephone numbers or another *mobile* numbers. Menu keys 176 are pressed to scroll through and find predetermined or "canned" message responses for the communicator's two-way paging response feature...

...procedure causes any user-originated VBRAAM RSE or VBRAAM selected data message to be transmitted in the heretofore described manner. An optional personal digital assistant (*PDA*) keypad 157, in Fig. I 1, is shown communicatively linked to communicator 100.

I 0 The VBRAAM method and associated CCAD-VBRAAM methods for two...true voice call. The dialed digit stream is sent via the SS7 network along with a IS-41 remote feature control request invoke to a *mobile* subscriber's home system HLR. Once the home system HLR receives the invoke message, the HLR instruction contained in the dialed digit stream is performed...

...recorded voice message box such as an integrated voice response data base. The stutter tone or voice recording is routed and then transmitted to the *mobile* subscriber, and the remote feature control operation is essentially concluded. When the forward or reverse voice channel is routed, it remains so for about three...

...call procedures, the remote feature control operation may be set up in

various classes of service. One class of service, for example, might allow the *mobile* cellular subscriber to dial *741 plus a ten-digit directory number that he or she wishes all land-to-*mobile* calls to be routed to, when the communicator or cellular phone and is no longer active on the network. This instruction is then sent to...communicators. The VBRAAM method, when combined with the aforementioned reverse control channel application-specific RAAM messaging procedure, creates a new paradigm in cellular. PCS and *mobile* satellite two-way data communications.

Accordingly, the VBRAAM method can used for wide variety of two-way data messaging applications, such as paging, text transfer, metered billing and debit applications, control for remote stationary devices and *mobile* devices, and other applications as described or obvious from the description. The VBRAAM method can be applied to any host cellular, PCS, and *mobile* satellite network without expensive network infrastructure add-ons, and requires no MSC or SS7 network software upgrades. The VBRAAM method operates transparently, and in effect...to the MCMS and HLR/SCP that this particular communicator I 00 user is powered up, is now active on the designated cellular, PCS, or *mobile* satellite network, and automatically and transparently requesting authentication thereby. Further, in the digit 3 data field space, if communicator I 00 is powering up as...SCP sends an authorization message upon the communicator I 00 user's next Call Request attempt.

The H[I] word 338 preferably also contains a *mobile*-to-land call (ML) indicator, and a land-to-*mobile* (LM) digit indicator 41 1, as seen in the RSE EVENT legend 41 0. For example, the ML indicator is always a number 8 in digit field 3 when a *mobile*-to-land call is being placed. The LM indicator is always a 9 in digit field 3 when a land-to-*mobile* call is being accepted. If a land-tomobile caller is calling a communicator I 00 user in a metered billing and debit application, and communicator...

...EVENT legend 41 0. In this instance the DC indicator resides under the Digit 4 data field space. A dropped call occurs quite frequently to *mobile* telephones, especially while traveling in a motor vehicle. The base site and *mobile* user typically will lose radio frequency link, and the *mobile* user will have to place another call to resume the conversation that was taking place. If a dropped call occurs, the next Call Request EVENT...communicator I 00 via the PSTN network, or alternatively a message to be sent via a broadcast paging network, or a message sent via a *mobile* satellite network, or a message sent via an IS- 1 36 Digital Control Channel (DCCH) compatible network and/or the VBRAAM forward or reverse messaging...embodiment of the invention, there is shown an air interface uplink pathway which may be utilized, for example when communicator 100 is configured as a *PDA*. In this ...tone to the currently serving base site so as to maintain a fullduplex SAT loop. If communicator I 00 is configured as a full-duplex *PDA*, the reverse voice or traffic channel is used as a data or text messaging medium in the same manner as that described for the forward voice or traffic channel. Communicator I 00, thus configured as a *PDA*, may now function as a mini computer for selected data messaging, such as text messaging, computer file transfer, multi-character me3saging, and the like. For...be transmitted between individuals, between groups or to groups of individuals, and from individual communicators or groups of communicators to control remote stationary and/or *mobile* objects and devices. Such selected data messages may be communicated over vast distances
- WO 98/02004 PCTIUS97/16176
45
such as in Fig. 2 1...

...two-way bandwidth on demand data messaging system. The method and apparatuses may be used with any wireless communications network, such as cellular, PCS, or *mobile* satellite, and may be communicatively linked with ...5 compliance monitoring, personal tracking and protection, child

location, home arrest, behavior modification, medical alert, outpatient monitoring, debit and metered billing for cellular, PCS and *mobile* satellite networks, anti-fraud and anti-cloning applications, and other stationary and mobilebased systems and services. Additional application-specific systems and services such as fullduplex...

...load partitioning, and electrical load management for commercial and residential uses, smart home management systems, security systems, gas and oil well head management and control, *vending* *machine* management and control, environmental systems *management* and control, *point* -of-sale data messaging, credit card verification, and the like. The reverse RAAM short messaging aspect of the system is transmitted on the control channels...

Claim
... means to reserve and route selected voice channels or traffic channels in response to the remote feature access control operation, the method comprising:
configuring a *mobile* switching center (MSC) to route said selected voice channels to a multi-port protocol converter (MPPQ for transmitting a selected data message on said selected...

...claim 1, wherein said communicator receives a data packet from a master central monitoring station (MCMS) communicatively linked to a downlink communications path including a *mobile* satellite.

7 The method of claim 1, wherein said communicator receives a data packet from a master central monitoring station (MCMS) communicatively linked to a...

...from a master central monitoring station (MCMS) communicatively linked to a downlink communications path including a forward digital control channel of a global system for *mobile* (GSM) signaling channel.
10 The method of claim 1, wherein said communicator receives a data packet from a master central monitoring station (MCMS) communicatively linked...digit field for transmission on said wireless communications network.
1 5

25 The method of claim 2, wherein said selected dialed digit stream includes a *mobile* identification number (MIN) utilized to transmit a communicative message.

26 The method of claim 25, wherein said selected data message includes a four-digit voice...related to control of a stationary apparatus.

32 The method of claim 1, wherein said selected data message includes data related to control of a *mobile* apparatus.

33 The method of claim 1, wherein said selected data message includes data related to a billing I 0 methodology.

34 The method of...AMPS and TACS, FSK modulated reverse control channel RECC 10 Kbps 48-word BCH hamming coded control channel means at a base transceiver and said *mobile* switching center (MSC).
66 The method of claim 58, further including means for processing and routing control channel application-specific data from a base transceiver station and a *mobile* switching center to a control channel application data master central monitoring station (MCMS) via a modem.
- WO 98/02004 PCTfUS97/16176
54

67 The method...IS-41 remote feature control operation.
1 5

71 The method of claim 69, wherein said remote feature access control

operation is communicated to a *mobile* switching center (MSC), and one or more translation tables route said selected voice channel to a signaling unit.

72 The method of claim 69, wherein...

...claim 69, wherein said communicator receives a data packet from a master central monitoring station (MCMS) communicatively linked to a downlink communications path including a *mobile* satellite.
- WO 98/02004
56 PCTfUS97/16176
76 The method of claim 69, wherein said communicator receives a data packet from a master central monitoring...from a master central monitoring station (MCMS) communicatively linked to a downlink communications path including a forward digital control channel of a global system for *mobile* (GSM) 1 5 signaling channel.

79 The method of claim 69, wherein said communicator receives a data packet from a master central monitoring station (MCMS...

...89 The method of claim 69, further including means for processing and routing control channel application-spccific data from a base transceiver station and a *mobile* switching center to a control channel application data master central monitoring station (CCAD-MCMS) via a modem.
- WO 98/02004 58 PCTfIJS97/16176

90 The...wireless communications network; and means for transmitting a selected data message on the wireless communications network in response to receiving said data message from a *mobile* switching center (MSC).
- WO 98/02004 PCTfUS97/16176
59

93 The apparatus of claim 92, further characterized in that said means for data communication on...for receiving and storing said control channel origination data packet at a base
station;
means for relaying said control channel origination data packet to a *mobile* switching center
(MSC); and
means for activating a selected service by loading parameter table values for said identification number and said serial number at the...

```
?s s21 and (point (2n) management or servicing or managed or manage or service)
Processing
Processed  10 of  27 files ...
Completed processing all files
               8  S21
         6862677  POINT
        13837549  MANAGEMENT
           23696  POINT(2N)MANAGEMENT
          436894  SERVICING
         2428591  MANAGED
         2257959  MANAGE
        14906376  SERVICE
     S22       8  S21 AND (POINT (2N) MANAGEMENT OR SERVICING OR MANAGED OR
                  MANAGE OR SERVICE)
?t s22/3,k/1

 22/3,K/1     (Item 1 from file: 15)
DIALOG(R)File  15:ABI/Inform(R)
(c) 2004 ProQuest Info&Learning. All rts. reserv.

01139523  97-88917
Sourcebook '96
Anonymous
Progressive Grocer  Sourcebook '96 Supplement  PP: Cover-48  Dec 1995
ISSN: 0033-0787  JRNL CODE: PGR
WORD COUNT: 18136
```

...TEXT: based on ems "Operational Information" that include new item tracking, in-store promotion evaluation/testing, scan promotions & ECR partnership programs for DSD, CAO and manufacturer *managed* replenishment.

CLIENTS: Kroger, HEB, Pathmark, Bruno's, ACME, other retailers and hundreds of leading CPG companies.

COMPANY STATEMENT: ems electronically supplies supermarket retailers and CPG...

... of future sales and compute time-phased inventory replenishment rules. The replenishment systems are an essential ingredient of Efficient Consumer Response allowing manufacturing to increase *service* levels and inventory turns and realize a decrease in inventory levels.
JTS ChequeOut Solutions 30 Corporate Woods, Suite 350 Rochester, NY 14623

PHONE: (716) 273... offers three products to customers: E3TRIM, a Smarter Buying system for DC replenishment; E3SLIM, a store-level replenishment system for chains; and E3CRISP, a supplier-*managed* inventory management solution. In addition to these product offerings, the company provides the education and support needed to assure success within the system.

CLIENTS: More...

... scanning, FourGen helps you improve the speed and accuracy of product ordering and distribution, create continuous replenishment and paperless warehouse environments, and ultimately improve customer *service* and increase sales. The Supply Chain Management suite--Inventory Control, Order Entry, Inventory Replenishment, and Purchasing--integrates with FourGen's Enterprise Financial applications. FourGen's...

... to provide convenient payment options, while reducing their losses. Large retail chains, grocery chains, and merchant acquiring banks use BPS's payment processing systems to *manage* their electronic payments.

Chekmate Electronics, Inc, 1003 Mansell Road Roswell, GA 30076
PHONE: (770) 594-6000 FAX: (770) 594-6006

CONTACT: Lloyd Baylard

SPECIALIZATION: Check...

... point-of-sale payment automation systems and terminals, including check readers, payment authorization systems, signature capture devices and MICR analyzers to distributors, retailers, and financial *service* institutions. Headquartered in Roswell, GA, Checkmate Electronics, Inc., has 168 employees. Checkmate has recently been ranked the 17th fastest growing small company in the United...network communications are offered: dial-up, ISDN, lease line and satellite. Other value-added services include a 24-hour Help Desk, comprehensive installation and maintenance *service* programs, and terminal management support. SPS Payment Systems, Inc. (SPS), is a majority-owned subsidiary of Dean Witter, Discover & Co. SPS' outsourcing services include electronic...

...800-8001

STATEMENT: Telxon provides a new revolutionary retail information and operational concept, "The Wireless Store." The wireless store provides the platform for wireless POS, *portable* point-of-sale and real time in-store merchandise management applications. Telxon solutions provide for enhanced customer *service* , price integrity, improved operational performance and the management of merchandise information solutions through wireless real-time interactive solutions.

FEATURING: The Retail Technology Group (RTG), a...

... Group provides consulting services, project management, system integration services and retail solution packages.

COMPANY STATEMENT: Telxon Corporation is a leading global manufacturer of wireless and *portable* tele-transaction systems. The company integrates advanced *Portable* Tele-Transaction Computers (PTCs) with wireless and network communication technology, a wide array of peripherals and application-specific software for its customers in more than 50 countries around the world. Telxon's executive, engineering, marketing and sales offices are headquartered in Akron, OH; its world manufacturing and domestic customer *service* facilities are located in Houston, TX. Telxon International is headquartered in Brussels, Belgium.

* HOST-BASED MANAGEMENT SYSTEMS
Advanced FoodSystems, Inc, 7227 N. 16th Street, Suite...offers three products to customers: E3TRIM, a Smarter Buying system for DC replenishment; E3SLIM, a store-level replenishment system for chains; and E3CRISP, a supplier-*managed* inventory management solution. In addition to these product offerings, the company provides the education and support needed to assure success within the system.

CLIENTS: More...

... find that SuperSked is the most effective tool to schedule store labor for all departments in a store. SuperSked creates a schedule that maximizes customer *service* while minimizing costs based on goals and employee constraints you have for each retail location. SuperSked also provides a number of highly integrated system options...

... distribution systems. Material is identified by condition and purpose, ensuring that only top-quality merchandise is available for sale and non-conforming material is properly *managed*. It can cross reference UPCs and SKUs, with management by category and department. RF terminals reduce paper to the minimum, increase productivity and, with real...COMPANY DESCRIPTION: IMB's People-Planner is the leading labor management software package for supermarkets. Store managers can achieve unprecedented levels of profitability and customer *service* through more accurate sales and labor forecasts, optimal employee scheduling and schedule enforcement with Time & Attendance software and electronic time clocks. People-Planner gives managers the tools they need to improve customer *service* and reduce costs by managing their labor resources more efficiently.

Kronos Incorporated Retail Systems Division 400 Fifth Avenue Waltham, MA 02154

PHONE: (800) 225-1561...

... find that SuperSked is the most effective tool to schedule store labor for all departments in a store. SuperSked creates a schedule that maximizes customer *service* while minimizing costs based on goals and employee constraints you have or each retail location. SuperSked also provides a number of highly integrated system options...

... including maintenance, cost of ownership analysis, network integration and business process re-engineering. Applications are available for point-of-sale, imaging, inventory management, merchandising, shelf *management*, etc.
* *POINT* OF SALE SYSTEMS

Epson America, Inc. OEM Division 20770 Madrona Avenue Torrance, CA 90509

PHONE: (310) 787-6300 FAX: (310) 782-5350

E-MAIL: http... designed specifically for PC-POS systems, includes slip, receipt, journal printers and multi-functional, high-speed station printers. Epson's line of retail components includes *handheld* computers, large touchscreen LCDs, display units, and the new small footprint IT-U375

and T-U950, which combine a custom IBM compatible Intel 486 PC...

...POS systems.

ADDITIONAL SERVICES: For VARs and System Integrators for the Grocery Store industry, Epson provides regional distribution, authorized VAR programs, national advertising, training, authorized *service* programs, and access to Epson's complete line of products including all retail printers and peripherals, *handheld* computers, standard and notebook PCs, IC cards, scanners, floppy and optical disk drives, as well as Epson's impact, inkjet and laser printers.
MGV America...

... all retail POS platforms. The MGV HelpDesk delivers a unique blend of operational and management tools that allows your support team to deliver exceptional customer *service* . The MGV HelpDesk application is a client server implementation which supports MS SQL Server, Sybase, and DB/2.2 client server databases. Manuals, graphics, and...

...Incandescent Light Controls

* LUXTROL(R) HID Light Controls

* POWERSTAT(R) Variable Transformers

* 5-WAY(R) Binding Posts

* SUPERCON(R) Electrical Connectors

ADDITIONAL SERVICES: Start-up *service*, *service* training and on-site repair and *service* can be provided depending on the productline.

COMPANY STATEMENT: Superior Electric has been designing, manufacturing and marketing voltage control and voltage conditioning equipment since 1938...

...TX 75050

PHONE: (214) 606-0307 FAX: (214) 660-1682

CONTACT: Steve Ward

SALES OFFICES: Dallas, TX, Toronto, Ontario CANADA, Montreal, Quebec CANADA

SPECIALIZATION: Sales & *Service* of Re-manufactured Point-of-Sale Equipment

ADDITIONAL SERVICES: On Site *Service*, Depot *Service* , Help Desk, Support, Training, Trade In Assistance, Leasing clients: Retailers of all types and sizes, Third-Party *Service* Organizations, VARs, Resellers, Dealers

COMPANY STATEMENT: Systech Retail Systems is one of the largest sales and *service* companies in North America specializing in remanufactured Point-of-Sale equipment and peripherals of all makes and models, including current and mature product.
Our strengths...

... decision to change their systems. This equipment is then remanufactured to original manufacturer standards and specifications and remarketed to end-users, dealers and third-party *service* organizations at prices significantly less than those available from the manufacturer. We provide our customers with a full range of quality services including depot repair, on-site *service* , support, help desk, parts sourcing and trade-in assistance. With offices in Dallas, Toronto and Montreal, we can assist you with all of your P...operation. The Catalyst system manages everything from inventory to personnel and material handling equipment. The results are improved inventory accuracy, increased productivity and enhanced customer

service . The Catalyst system is UNIX based and will interface with most peripherals, including hardware, host systems, material handling and radio frequency equipment. Do-it-yourself...

... win/win for the store and the customer. And it's destined to become the industry standard for supermarkets.

COMPANY STATEMENT: Handle Helper is a *service*-oriented company dedicated to controlling the retailers' front-end costs and improving its customers' level of satisfaction.
Novem Trading International B.V. 9 Allaura Boulevard...Self-serve bakery cases, wall and floor laminate, oak bread merchandisers, tables, produce slant top tables. STRENGTHS: Kason Market Products is the leader in self *service* bakery merchandising. Let us help you develop your bakery layout with our CAD free design *service*. Full perspective presentation. Same *service* applies to produce department. Custom solutions at standard pricing.

* BOX CUTTERS

Pacific Handy Cutter, Inc. P.O. Box 10869 Costa Mesa, CA 92627 PHONE: (800 ...

...compensation costs!

* CARTS

Four D, Inc. P.O. Box 240326 Apple Valley, MN 55124

PHONE: (800) 524-7057 FAX: (612) 894-0634

CONTACT: Call Customer *Service* for info or ordering.
SPECIALIZATION: Four D, Inc. manufactures the following Small Comforts(R) products: Shop-Along Child Carrier, Shop-Along Infant Carrier, Diaper Changing Table, Diaper *Vending* *Machine*, Baby Wait Station, *Mobile* Diaper Changing Center, Cabinet Diaper Changing Center, Diaper Waste Receptacles, Changing Pads, Diaper Refill Kits and grocery cart Child Safety Straps. Custom colors available. Four...

...Company, Inc. P.O. Box 907 Mira Loma, CA 91752

PHONE: (800) 242-8416 FAX: (909) 360-9186

CONTACT: Chris Nelson

COMPANY DESCRIPTION: National sales, *service* and manufacturing company of merchandising products and shopping carts. SPECIALIZATION: Merchandising products (see Merchandising Equipment listing), buying used shopping carts, selling of reconditioned carts, rentals, cart *service* & repair, replacement cart parts, cart accessories.

ADDITIONAL SERVICES: Cart corrals, child safety products, handicap shoppers, cart security systems.
Supercart International, Inc. is an Associated Company...

...2655

PHONE: (800) 828-3655

FAX: (800) 828-3577

CONTACT: Door sales or cooler sales

PRODUCTS: Eliason Easy Swing double action impact doors for all *service*, traffic and convenience doorways in supermarkets or other applications. Eliason commercial walk-in coolers, freezers and floral display reach-ins open front dairy and Econo Cover night curtains.

STRENGTHS: Eliason has been a supplier to the supermarket industry for over 35 years. We specialize in quality products, *service* and customer satisfaction. Our products are sold direct and can be shipped within three weeks after receipt of order. A free price/spec catalog is...

... stores, and refrigerated warehouses. E.I.L. specializes in controlling commercial refrigeration systems, including parallel compressor systems and variable speed compressor systems.

Entergy Systems and *Service*, Inc. 4740 Shelby Drive, Suite 105 Memphis, TN 3X118

PHONE: (800) 477-7274 FAX: (901) 367-2873

CONTACT: Ken Black, Director of Marketing

PRODUCTS: Energy management, lighting, HVAC, and refrigeration management services.

STRENGTHS: Entergy Systems and *Service*, Inc. evaluates, retrofits, and maintains lighting, HVAC, and refrigeration systems with a focus on turnkey solutions to reduce the cost to our customers. Our services...systems.

* FIXTURES/FURNISHINGS

Four D, Inc. P.O. Box 240326 Apple Valley, MN 55124

PHONE: (800) 524-7057 FAX: (612) 894-0634
CONTACT: Call Customer *Service* for info or ordering.

SPECIALIZATION: Four D, Inc., manufactures the following Small Comforts(R) products: Shop-Along Child Carrier, Shop-Along Infant Carrier, Diaper Changing Table, Diaper *Vending* *Machine*, Baby Wait Station, *Mobile* Diaper Changing Center, Cabinet Diaper Changing Center, Diaper Waste Receptacles, Changing Pads, Diaper Refill Kits and grocery cart Child Safety Straps. Custom colors available. Four...

...endless merchandisers and our new ultimate floral spot merchandiser, the Bouquet Mart. Floratech can custom design or modify standard products to meet customer needs.

* FOOD *SERVICE*/PREPARATION EQUIPMENT

FMP Equipment Corporation P.O. Box 14069 Greensboro, NC 27415

PHONE: (910) 621-2882 FAX: (910) 621-7901

CONTACT: Terrell Youngblood

PRODUCTS: Smokers...
... food chute interlock. All are UL, NSF, and USDA listed and carry a full one year parts and labor warranty backed by over 200 factory *service* centers nationwide.

Henny Penny Corporation P.O. Box 60-1219 U.S. Rte. 35 West Eaton, OH 45320

PHONE: (513) 456-8400 FAX: (513) 456...

... years Henny Penny has manufactured equipment to provide the foodservice market with quality food, excellent taste presentation, high profit margins, and after the sale, the *service* support. With our Hot-N-Tender Deli System, featuring Therma-Vec, we offer a better package for the money. A top-of-the-line equipment... retailer profits. Hobart helps you specify what' s best for your needs, not what we happen to have. Hobart has more than 200 sales and *service* offices nationwide, with more than 1700 factory rained *service* technicians.

Hollymatic Corporation 600 E. Plainfield Road Countryside, IL 60525-6914

PHONE: (708) 579-3700 FAX: (708) 579-1057

CONTACT: Roger Costello
PRODUCTS: Patty machines, grinders, mixer/grinders, meat saw, mixers, vacuum tumblers, vacuum packaging machines, stuffers, linker, juice machines, patty paper, local authorized *service*.

STRENGTHS: For more than 50 years, Hollymatic has been manufacturing high quality equipment for the food processing industry, fully supported by a strong network of local authorized dealer *service* locations.

Ubert by Toastmaster 1400 Toastmaster Drive Elgin, IL 60120

PHONE: (800) 323-2210 FAX: (800) 635-4725 CONTACT: Allan Ahrens, National Sales Manager

COMPANY...

...Street Columbus, OH 43215

PHONE: (800) 333-9963 FAX: (614) 228-8776

CONTACT: Supermarket Division

SALES OFFICES: Columbus, OH, Phoenix, AZ
COMPANY STATEMENT: A full *service* distributor of foodservice equipment and smallwares. Wasserstrom is also a complete supplier of merchandising display and decor products. Emphasis in creative case merchandising and decor...

...Connectors

* STABILINE(R) Voltage Regulators

* STABILINE(R) Power Conditioners

* STABILINE(R) Uninterruptible Power Supplies

* STABILINE(R) Transient Voltage Suppressors/ RFI Filters

ADDITIONAL SERVICES: Start-up *service*, *service* training and on-site repair and *service* can be provided depending on the productline.

COMPANY STATEMENT: Superior Electric has been designing, manufacturing and marketing voltage ... Tacoma, WA 98499 PHONE: (800) 423-3221 FAX: (206) 588-5539
SALES OFFICES: Sales offices worldwide. Over 100 sales locations throughout North America. Contact customer *service* for sales in your area.

SPECIALIZATION: Perstorp Xytec, Inc. specializes in the design and manufacture of reusable plastic containers for materials handling, shipping, work in...

...Company, Inc. P.O. Box 907 Mira Loma, CA 91752

PHONE: (800) 242-8416 FAX: (909) 360-9186

CONTACT: John Peggs

COMPANY DESCRIPTION: National sales, *service* and manufacturing company, of merchandising products and shopping carts.

SPECIALIZATION: Custom steel & aluminum produce racks, bakery shelving, specialty wire racks, dividers. Shopping carts (see Carts...and talkers,

ceiling displays, product merchandisers and display construction accessories. For over 30 years, FFR has offered quality accessories and innovative solutions--backed by superior *service*. Call for a free copy of FFR' s complete Buyers Guide.
Pallet Display Systems 214 W. Erie Street Chicago, IL 60610

PHONE: (312) 943-5959...Felix Ave. N9C 3L2

SPECIALIZATION: GIANT INFLATABLES; CUSTOM INFLATABLES; Helium Parade; Cold Air Rooftops; Costumes, e.g. 50 ft. Crab; Tube Signs

ADDITIONAL SERVICES: Full *Service* Co. Internationally for World Class Special Events

CLIENTS: Super Bowl, IGA, Meijers, Thrifty Acres, Farmer Jack Stores, Frito Lay, Chef Boyardee, Kool-Aid, Foodtown, Chrysler, United Airlines, MCA, Mr. Big Candy Bar, Pepsi Cola, Campbell Soup, Cloverleaf Tuna, Mr. Grocer

COMPANY STATEMENT: Value, *Service*, Quality "We care about your Success"

Integrated Software 475 Park Avenue South New York, NY 10016-6901

PHONE: (212) 545-0110 FAX: (212) 545-0198...

... marketing programs based on customer purchase behaviors. Services include: application processing, card issuance, real-time transaction management, database development/management, data analysis and reporting, customer *service* support, and targeted marketing. SPS Payment Systems, Inc. is a majority-owned subsidiary of Dean Witter, Discover & Co. SPS' outsourcing services include electronic transaction processing...

...Felix Ave. N9C 3L2

SPECIALIZATION: GIANT INFLATABLES; CUSTOM INFLATABLES; Helium Parade; Cold Air Rooftops; Costumes, e.g. 50 ft. Crab; Tube Signs

ADDITIONAL SERVICES: Full *Service* Co. Internationally for World Class Special Events

CLIENTS: Super Bowl, IGA, Meijers Thrifty Acres, Farmer Jack Stores, Frito Lay, Chef Boy Ar Dee, Kool-Aid, Foodtown, Chrysler, United Airlines, MCA, Mr. Big Candy Bar, Pepsi Cola, Campbell Soup, Cloverleaf Tuna, Mr. Grocer

COMPANY STATEMENT: Value, *Service*, Quality "We care about your Success"

* CHECK CASHING SYSTEMS

* FREQUENT BUYER/LOYALTY PROGRAMS
JTS ChequeOut Solutions 30 Corporate Woods, Suite 350 Rochester, NY 14623

PHONE...

... your customers. NEC offers turnkey card applications. From embossing/encoding to barcoding to custom packaging needs, NEC will show you how to effectively implement and *manage* your Courtesy/Check Cashing Card.

S2 Systems, Inc. 15301 Dallas Parkway Dallas, TX 75248-46X3

PHONE: (214) 458-3800 FAX: (214) 458-3876

COMPANY DESCRIPTION...

... the necessary tools to create and maintain your loyalty card program. Customer Information establishes your customer database. Card Issuance provides the ability to order and *manage* identification cards for the card program. Frequent Shopper maintains the shopper points/award

transactions and history of sales activity at the tender level. Program changes...
... marketing programs based on customer purchase behaviors. Services include: application processing, card issuance, real-time transaction management, database development/management, data analysis and reporting, customer *service* support, and targeted marketing. SPS Payment Systems, Inc. is a majority-owned subsidiary of Dean Witter, Discover & Co. SPS' outsourcing services include electronic transaction processing...

...Felix Ave. N9C 3L2

SPECIALIZATION: GIANT INFLATABLES; CUSTOM INFLATABLES; Helium Parade. Cold Air Rooftops; Costumes, e.g. 50 ft. Crab; Tube Signs

ADDITIONAL SERVICES: Full *Service* Co. Internationally for World Class Special Events

CLIENTS: Super Bowl, IGA, Meijers Thrifty Acres, Farmer Jack Stores, Frito Lay, Chef Boy Ar Dee, Kool-Aid, Foodtown, Chrysler, United Airlines, MCA, Mr. Big Candy Bar, Pepsi Cola, Campbell Soup, Cloverleaf Tuna, Mr. Grocer

COMPANY STATEMENT: Value, *Service*, Quality "We care about your Success"

* IN-STORE MARKETING
National Association of Demonstration Companies P.O. Box 511 Farmington, CT 06034 PHONE: (800) 338-NADC...

... with our innovative on-site customer views, we provide you with highly reliable and actionable consumer information...at a very reasonable cost.

ADDITIONAL SERVICES: Full *service* merchandising and marketing research capabilities.

COMPANY STATEMENT: For more than 30 years, Pat Henry Perceptions has worked with many of the nation's leading companies. We proudly stand behind the following Mission statement: "Providing unsurpassed professionalism, innovation, and integrity in the research and promotion of a client's product or *service* with the "Can Do" attitude to meet every customer' s needs."

Simple Signman, Inc. 8475 Western Way Jacksonville, FL 32256

PHONE: (800) 874-1732 FAX... clients' merchandising, demo/sampling, and promotional needs. The strength of this organization is in its ability to customize and localize the programs and provide superior *service* and execution for retailers and manufacturers. In addition, by combining the services of ADVO, Inc., Marketing Force has created a new array of integrated in...

... SERVICES: Store Remodels, Product Stickering, POP Placement, In-store Surveys.

CLIENTS: Procter & Gamble, Colgate, Pepsi

COMPANY STATEMENT: SPAR Marketing is committed to providing hassle-free *service* that always exceeds our customer's expectations. We offer solutions to unique retail merchandising problems through our network of professional merchandisers. We use our experience in strategic planning and full *service* market analysis. We can provide your firm with site analysis, consumer research, customized mapping services, a visual database of your market and gravity modeling. In...

... tools such as Nielsen WORKSTATION and SPACEMAN(TM) for Windows, help clients develop more effective sales, marketing, promotion and advertising programs. Nielsen's sales and *service* teams provide consulting and training support to customers. Nielsen created and built the decision support information business overseas, beginning its global drive more than

50...
...Americas New York, NY 10036

PHONE: (212) 302-8277 FAX: (212) 302-2587

CONTACT: Marla Altberg, Senior VP, Marketing

YEAR FOUNDED: 1971

COMPANY DESCRIPTION: Full *service* promotion agency with particular expertise in game promotions.

SERVICES: Creation and administration of sweepstakes, games and contests. Also provides fulfillment, database management, tie-ins, co...

...2463 FAX: (770) 437-7554

CONTACT: Kurt Wilson

SALES OFFICES: San Francisco, Boston, Chicago, Philadelphia, St. Louis, Orlando

SPECIALIZATION: The Facility Group is a multi-*service* engineering and construction management firm which specializes in the planning, design and construction of new and renovated dry and refrigerated warehouses, distribution centers and food... Engineers Specializing in the Planning, Design and Construction of Freezers, Coolers and Grocery Warehouse Facilities and Retail Centers.

ADDITIONAL SERVICES:

* Feasibility Design

* Master Planning

* Construction *Service*

* CONSULTANTS

Dakota Worldwide Corporation 4801 West 81st Street, Suite 105 Bloomington, MN 55437

PHONE: (800) 475-4505 FAX: (612) 835-4461

CONTACT: Tom Mach
COMPANY STATEMENT: Dakota Worldwide Corporation is a market research consulting firm specializing in strategic planning and full *service* market analysis. We can provide your firm with site analysis, consumer research, customized mapping services, a visual database of your market and gravity modeling. In...

...2463 FAX: (770) 437-7554

CONTACT: Kurt Wilson

SALES OFFICES: San Francisco, Boston, Chicago, Philadelphia, St. Louis, Orlando

SPECIALIZATION: The Facility Group is a multi-*service* engineering and construction management firm which specializes in the planning, design and construction of new and renovated dry and refrigerated warehouses, distribution centers and food...

... Engineers Specializing in the Planning, Design and Construction of Freezers, Coolers and Grocery Warehouse Facilities and Retail Centers.

ADDITIONAL SERVICES:

* Feasibility Design

* Master Planning

* Construction *Service*

* DECOR

Jarob Design, Inc. 2601 Elmridge N.W. Grand Rapids, MI 49544-1375

PHONE: (800) 843-2508 FAX: (616) 453-6362

CONTACT: Ronald L. Wilson...

...516) 292-9190

CONTACT: Gary Lind

COMPANY STATEMENT: We are one of the foremost store planning, design and decor companies for the retail food industry, *servicing* both small independents as well as nationwide chains. Our 49 years of experience results in creative store planning with innovative designs, all within your budget...2463 FAX: (770) 437-7554

CONTACT: Kurt Wilson

SALES OFFICES: San Francisco, Boston, Chicago, Philadelphia, St. Louis, Orlando

SPECIALIZATION: The Facility Group is a multi-*service* engineering and construction management firm which specializes in the planning, design and construction of new and renovated dry and refrigerated warehouses, distribution centers and food...

... the I Planning, Design and Construction of Freezers, Coolers and I Grocery Warehouse Facilities and Retail Centers. I

ADDITIONAL SERVICES:

* Feasibility Design

* Master Planning

* Construction *Service*
* DISTRIBUTION SERVICES/SUPPLIES

Unisource Grocery Supply Systems 1001 South Trooper Road Norristown, PA 19403

PHONE: (800) 220-6019 FAX: (610) 630-2700

CONTACT: Dick Pokorski...

...commitment is to significantly reduce your total supply spending through our outsourcing program. With a national network of distribution facilities we guarantee complete, on-time *service* from a menu of delivery options designed to meet your needs.

ADDITIONAL SERVICES: In addition to Unisource's cost savings and asset re-deployment opportunities...

...2463 FAX: (770) 437-7554

CONTACT: Kurt Wilson

SALES OFFICES: San Francisco, Boston, Chicago, Philadelphia, St. Louis, Orlando

SPECIALIZATION: The Facility Group is a multi-*service* engineering and construction management firm which specializes in the planning, design and construction of new and renovated dry and refrigerated warehouses, distribution centers and food...

... Engineers Specializing in the Planning, Design and Construction of Freezers, Coolers and Grocery Warehouse Facilities and Retail Centers.

ADDITIONAL SERVICES:

* Feasibility Design

* Master Planning

* Construction *Service*

* FINANCIAL SERVICES: CONSUMER

National Commerce Bank Services, Inc. One Commerce Square, Suite 850 Memphis, TN 38150
PHONE: (800) 264-2609 FAX: (901) 523-3627

CONTACT...

...Since 1948, we have offered quality, long term commitment and results to our principals and customers. Our professional staff of account executives, marketing department, customer *service* specialist and complete retail staff "gets the job done" at every level of the distribution network that ...can take care of your total insurance package for business.

ADDITIONAL SERVICES: Grocers Insurance Group represents a progressive, growing company dedicated to providing the finest *service* and products possible, at competitive prices. In addition to insurance protection, Grocers Insurance also provides: claims management services, loss prevention, United Work Place Consultants, governmental...

... needs. Your insurance program should protect your employees, stock, refrigeration system, equipment, vehicles, and operations.

ADDITIONAL SERVICES: Liberty Mutual provides effective loss prevention, claims and *managed* care services to help you avoid losses and keep costs in control including special programs for grocers.
CLIENTS: For a list of customers in your...

...866-4692 FAX: (515) 287-2747

CONTACT: Gerald H. Parker, National Sales Manager

COMPANY DESCRIPTION: Video Home Theater was founded in 1982 and grew from *servicing* a single supermarket to over 400 supermarkets in 32 states. We supply current new releases in video as well as video games, audio books, video accessories and video sell-through titles. Our outstanding market share is a result of an uncompromising commitment to quality and *service*, building strong partnerships with the supermarket industry.

SPECIALIZATION: By providing complete turnkey video departments designed specifically for the supermarket industry, we bring to our customers an unprecedented level of quality and *service* through several unique programs.

ADDITIONAL SERVICES: Video Home Theater features exclusive space-saving display systems custom designed to meet the customer's specific needs; creative...
?t s21 and point
>>>'AND' not allowed in command
?s s21 and point

```
              8  S21
        6862677  POINT
     S23       8  S21 AND POINT
?t s23/3,k/1
```

23/3,K/1 (Item 1 from file: 15)
DIALOG(R)File 15:ABI/Inform(R)

01139523 97-88917
Sourcebook '96
Anonymous
Progressive Grocer Sourcebook '96 Supplement PP: Cover-48 Dec 1995
ISSN: 0033-0787 JRNL CODE: PGR
WORD COUNT: 18136

...TEXT: offers proven electronic payment software solutions which include a configurable suite of retail products designed to centralize authorization and capture all payment types at the *point* of sale. Modules include debit and credit, check authorization, check collections, frequent shopper, refunds authorization, gift certicate authorization, card issuance, fraud management, EBT, cash dispensing...

... CLIENTS: Federated Systems Group, JCPenney, Kmart, Walgreens, Winn Dixie, Circuit City, and many other industry leaders

COMPANY STATEMENT: Checkmate Electronics, Inc. develops, manufactures and markets *point*-of-sale payment automation systems and terminals, including check readers, payment authorization systems, signature capture devices and MICR analyzers to distributors, retailers, and financial service...800-8001
STATEMENT: Telxon provides a new revolutionary retail information and operational concept, "The Wireless Store." The wireless store provides the platform for wireless POS, *portable* *point* -of-sale and real time in-store merchandise management applications. Telxon solutions provide for enhanced customer service, price integrity, improved operational performance and the management...

... Group provides consulting services, project management, system integration services and retail solution packages.

COMPANY STATEMENT: Telxon Corporation is a leading global manufacturer of wireless and *portable* tele-transaction systems. The company integrates advanced *Portable* Tele-Transaction Computers (PTCs) with wireless and network communication technology, a wide array of peripherals and application-specific software for its customers in more than...provides a number of highly integrated system options to improve your effectiveness in managing labor. This approach allows you to integrate information from time & attendance, *point*-of-sale, and other human resource systems.

CLIENTS: The Kroger Company, Safeway, Giant Eagle, Save Mart Supermarkets, Erickson Diversified
COMPANY STATEMENT: MRI develops labor forecasting...

... minimum investment. It supports multi-node distributions systems with inter-warehouse transfers. A flexible calculation engine enables users to customize calculations for usage rate, order *point*, line *point*, and order quantity. It provides usage tracking, replenishment scripts, exception processing, and reporting, and generates purchase requisitions from adjusted buy recommendations. FourGen Enterprise has proven...

... provides a number of highly integrated system options to improve your effectiveness in managing labor. This approach allows you to integrate information from time & attendance, *point* -of-sale, and other human resource systems.

CLIENTS: The Kroger Company, Safeway, Giant Eagle, Save Mart Supermarkets, Erickson Diversified

COMPANY STATEMENT: MRI develops labor forecasting...

... state of the art technology-based solutions for virtually all segments of retail. Most solutions are based on the open standard compliant Digital products, including *point* of sale terminals, kiosks, PCs and servers, as well as industry leading Alpha based workstations and servers. In addition to hardware and software, Digital and...

... broadest range of services available to retailers today, including maintenance, cost of ownership analysis, network integration and business process re-engineering. Applications are available for *point*-of-sale, imaging, inventory management, merchandising, shelf *management*, etc.

* *POINT* OF SALE SYSTEMS

Epson America, Inc. OEM Division 20770 Madrona Avenue Torrance, CA 90509

PHONE: (310) 787-6300 FAX: (310) 782-5350

E-MAIL: http... designed specifically for PC-POS systems, includes slip, receipt, journal printers and multi-functional, high-speed station printers. Epson's line of retail components includes *handheld* computers, large touchscreen LCDs, display units, and the new small footprint IT-U375 and T-U950, which combine a custom IBM compatible Intel 486 PC...

... distribution, authorized VAR programs, national advertising, training, authorized service programs, and access to Epson's complete line of products including all retail printers and peripherals, *handheld* computers, standard and notebook PCs, IC cards, scanners, floppy and optical disk drives, as well as Epson's impact, inkjet and laser printers.

MGV America...

... Drive, Suite 130 Raleigh, NC 27609 PHONE: (800) 849-6482 FAX: (919) 790-8214

CONTACT: Sales Department

SALES OFFICES: Raleigh, NC, Toronto, Canada

SPECIALIZATION: IBM *Point* of Sale Platforms, GSA, Supermarket, Chain Sales

CLIENTS: Ralph's Grocery, Wegman's Foods, McCarty-Holman Co., Inc., Albertson's, ABCO Foods, A & P, Publix...

...more...

COMPANY STATEMENT: MGV America has earned an international reputation as the leader in retail support systems. MGV's cornerstone marketplace is in the IBM *Point* of Sale platforms. Our productivity and support tools include: Automated Operator, Disk Optimizer, Screen Saver, Console Security, Test Sequencer, Background Task Manager, Remote Operator Extended ...

... state of the art technology-based solutions for virtually all segments of retail. Most solutions are based on the open standard compliant Digital products, including *point* of sale terminals, kiosks, PCs and servers, as well as industry leading Alpha based workstations and servers. In addition to hardware and software, Digital and...

... broadest range of services available to retailers today, including maintenance, cost of ownership analysis, network integration and business process re-engineering. Applications are available for *point*-of-sale, imaging, inventory management, merchandising, shelf management, etc.

Superior Electric 383 Middle Street Bristol, CT 06010

PHONE: (860) 585-4500 FAX: (860) 582-3784...

... as the industry leader for variable transformers (tradename POWERSTAT(R). Our advanced STABILINE(R) power conditioning products protect a wide range of sensitive electronics--computers, *point* of sale systems, LANs, mission-critical loads, etc.--from dangerous fluctuations in utility power, and can provide dependable battery backup in the event of a...

...606-0307 FAX: (214) 660-1682

CONTACT: Steve Ward

SALES OFFICES: Dallas, TX, Toronto, Ontario CANADA, Montreal, Quebec CANADA

SPECIALIZATION: Sales & Service of Re-manufactured *Point* -of-Sale Equipment

ADDITIONAL SERVICES: On Site Service, Depot Service, Help Desk, Support, Training, Trade In Assistance, Leasing clients: Retailers of all types and sizes...

...Service Organizations, VARs, Resellers, Dealers

COMPANY STATEMENT: Systech Retail Systems is one of the largest sales and service companies in North America specializing in remanufactured *Point* -of-Sale equipment and peripherals of all makes and models, including current and mature product.

Our strengths lie in our ability to purchase from end...bottom line profitability. For the ultimate in security, Checkpoint's Impulse(R) source tagging program embeds security labels within products or their packaging at the *point* of manufacture.

* SPACE MANAGEMENT SOFTWARE

Kwikee(R) Shelf Management Operations, a Division of: Multi-Ad Services, Inc. 1720 West Detweiller Drive Peoria, IL 61615-1695...

... state of the art technology-based solutions for virtually all segments of retail. Most solutions are based on the open standard compliant Digital products, including *point* of sale terminals, kiosks, PCs and servers, as well as industry leading Alpha based workstations and servers. In addition to hardware and software, Digital and...

... broadest range of services available to retailers today, including maintenance, cost of ownership analysis, network integration and business process re-engineering. Applications are available for *point*-of-sale, imaging, inventory management, merchandising, shelf management, etc.

* BAGS, BAG CLOSURES, BOXES

Handle Helper, L.P. 744 Montgomery Street, Suite 200 San Francisco, CA... 9310

CONTACT: Dale E. Jennings

COMPANY STATEMENT: Pacific Handy Cutter, Inc. is the original manufacturer of the Handy Cutter, the Handy Hook Knife, the Safety *Point* Blade and the original Safety Cutter and NEW Safety Cutter S2. The Safety Cutter S2 features an ergonomic handle, safety guard, locked-in cutting positions, enclosed blade storage unit, patented Safety *Point* Blade and reduces accidents and damaged merchandise, insurance claims and workers compensation costs!

* CARTS

Four D, Inc. P.O. Box 240326 Apple Valley, MN 55124...

...or ordering.
SPECIALIZATION: Four D, Inc. manufactures the following Small Comforts(R) products: Shop-Along Child Carrier, Shop-Along Infant Carrier, Diaper Changing Table, Diaper *Vending* *Machine*, Baby Wait Station, *Mobile* Diaper Changing Center, Cabinet Diaper Changing Center, Diaper Waste Receptacles, Changing Pads, Diaper Refill Kits and grocery cart Child Safety Straps. Custom colors available. Four...or ordering.

SPECIALIZATION: Four D, Inc., manufactures the following Small Comforts(R) products: Shop-Along Child Carrier, Shop-Along Infant Carrier, Diaper Changing Table, Diaper *Vending* *Machine*, Baby Wait Station, *Mobile* Diaper Changing Center, Cabinet Diaper Changing Center, Diaper Waste Receptacles, Changing Pads, Diaper Refill Kits and grocery cart Child Safety Straps. Custom colors available. Four...

...21808 Eugene, OR 97402 PHONE: (800) 233-9663 FAX: (541) 688-5868

CONTACT: Chris Elliott

SPECIALIZATION: Wood Display Fixtures for Wine/Liquor, Bakery, Housewares and *Point*-of-Purchase.

COMPANY DESCRIPTION: Design and manufacture Oak, Maple and Douglas Fir display fixtures. No minimum purchase requirements for standard fixtures shown in our unique color catalog. Our durable fixtures are modular in design so you can add options or rearrange as needed. Custom designs in volume including *Point*-of-Purchase.

* FLOORING/FLOOR CARE PRODUCTS

Buckeye International, Inc. 2700 Wagner Place Maryland Heights, MO 63043 PHONE: (800) 321-2583 FAX: (314) 298-2850

CONTACT... rackable, diamond or smooth deck, many models, sizes, and custom options. Grocery Transport Pallet accommodates warehouse, trailer or automated pallet dispenser. Call for free catalog.

* *POINT* OF PURCHASE DISPLAYS

California Quality Plastics 2226 Castle Harbor Place South Ontario, CA 91761

PHONE: (800) 523-8674, (909) 930-5535 FAX: (909) 930-5540

CONTACT: Larry G. Shipp, National Sales Manager
COMPANY DESCRIPTION: Manufacturer of museum quality plastic *point* -of-sales displays, dispensers and organizers for grocery stores, convenience stores and the restaurant industries. We design and custom fabricate products using acrylic, styrene and...the full and half size permanent pallet display fixtures to promotional corrugated pallet skits, which house and enhance the presentation of palletized product at the *point* of sale. The units have several exclusive signage and header options designed to increase visibility and maximize impulse purchase.

ADDITIONAL SERVICES/FEATURES/BENEFITS:

* Units come...

... bottom line profitability. For the ultimate in security, Checkpoint's Impulse(R) source tagging program embeds security labels within products or their packaging at the *point* of manufacture.

KartControl(TM) P.O. Box 278 Thousand Palms, CA 92276 PHONE: (800) 303-KART (5278) FAX: (619) 343-1029

CONTACT: Art Zelda
COMPANY... increase sales of perishable foods. Hundreds of high-quality recipes for meat, produce and seafood as well as an extensive line of recipe racks. Other *point* -of-purchase materials include: produce & seafood guidebooks, POS cards, posters, static clings, brochures, shelf talkers, rail strips, kids promotional items and more. Official PBH distributor...Jacksonville, FL 32256

PHONE: (800) 874-1732 FAX: (904) 363-0300

* Question: Do You Want to Increase Sales 5%, 10%, 20% or More?

* Answer: Decorations *Point* of Purchase Hardware Corrugated Display Wrap For your free 92 page Catalog & Decorating Guide Call (800) 874-1732

WMG (Windsor Marketing Group) 2 Industrial Road team of consultants, specialists in merchandising, *point* -of-purchase and in-store sign communications, work with design, pre-press and production experts, to help you create or adjust a program to stimulate... of the planning and preparation involved in designing programs and their enhancements for easy weekly implementation in-store.

Our team of consultants, specialists in merchandising, *point*-of-purchase and in-store sign communications, work with design, pre-press and production experts, to help you create or adjust a program to stimulate...
?t s23/3,k/2

23/3,K/2 (Item 1 from file: 148)
DIALOG(R)File 148:Gale Group Trade & Industry DB

08345819 SUPPLIER NUMBER: 17826782 (USE FORMAT 7 OR 9 FOR FULL TEXT)
Progressive Grocer Sourcebook '96.(Special Supplement)(Buyers Guide)
Progressive Grocer, v74, n12, pS3(45)
Dec, 1995
DOCUMENT TYPE: Buyers Guide ISSN: 0033-0787 LANGUAGE: English
RECORD TYPE: Fulltext; Abstract
WORD COUNT: 21236 LINE COUNT: 01938

... offers proven electronic payment software solutions which include a configurable suite of retail products designed to centralize authorization and capture all payment types at the *point* of sale. Modules include debit and credit, check authorization, check collections, frequent shopper, refunds authorization, gift certificate authorization, card issuance, fraud management, EBT, cash dispensing...

...CLIENTS: Federated Systems Group, JCPenney, Kmart, Walgreens, Winn Dixie, Circuit City, and many other industry leaders COMPANY STATEMENT: Checkmate Electronics, Inc. develops, manufactures and markets *point* -of-sale payment automation systems and terminals, including check readers, payment authorization systems, signature capture devices and MICR analyzers to distributors, retailers, and financial service...800-8001 STATEMENT: Telxon provides a new revolutionary retail information and operational concept, "The Wireless Store." The wireless store provides the platform for wireless POS, *portable* *point*-of-sale and real time in-store merchandise management applications. Telxon solutions provide for enhanced customer service, price integrity, improved operational performance and the management...

...Group provides consulting services, project management, system integration services and retail solution packages. COMPANY STATEMENT: Telxon Corporation is a leading global manufacturer of wireless and *portable* tele-transaction systems. The company integrates advanced *Portable* TeleTransaction Computers (PTCs) with wireless and network communication technology, a wide array of peripherals and application-specific software for its customers in more than 50...minimum

investment. It supports multi-node distributions systems with inter-warehouse transfers. A flexible calculation engine enables users to customize calculations for usage rate, order *point*, line *point*, and order quantity. It provides usage tracking, replenishment scripts, exception processing, and reporting, and generates purchase requisitions from adjusted buy recommendations. FourGen Enterprise has proven...

...provides a number of highly integrated system options to improve your effectiveness in managing labor. This approach allows you to integrate information from time & attendance, *point*-of-sale, and other human resource systems. CLIENTS: The Kroger Company, Safeway, Giant Eagle, Save Mart Supermarkets, Erickson Diversified COMPANY STATEMENT: MRI develops labor forecasting...state of the art technology-based solutions for virtually all segments of retail. Most solutions are based on the open standard compliant Digital products, including *point* of sale terminals, kiosks, PCs and servers, as well as industry leading Alpha based workstations and servers. In addition to hardware and software, Digital and ...

...broadest range of services available to retailers today, including maintenance, cost of ownership analysis, network integration and business process re-engineering. Applications are available for *point*-of-sale, imaging, inventory management, merchandising, shelf *management*, etc.

* *POINT* OF SALE SYSTEMS

EPSON

Epson America, Inc. OEM Division 20770 Madrona Avenue Torrance, CA 90509 PHONE: (310) 787-6300 FAX: (310) 782-5350 E-MAIL...

...designed specifically for PC-POS systems, includes slip, receipt, journal printers and multi-functional, high-speed station printers. Epson's line of retail components includes *handheld* computers, large touchscreen LCDs, display units, and the new small footprint IT-U375 and T-U950, which combine a custom IBM compatible Intel 486 PC...

...distribution, authorized VAR programs, national advertising, training, authorized service programs, and access to Epson's complete line of products including all retail printers and peripherals, *handheld* computers, standard and notebook PCs, IC cards, scanners, floppy and optical disk drives, as well as Epson's impact, inkjet and laser printers.

mgv

MGV...

...Drive, Suite 130 Raleigh, NC 27609 PHONE: (800) 849-6482 FAX: (919) 790-8214 CONTACT: Sales Department SALES OFFICES: Raleigh, NC, Toronto, Canada SPECIALIZATION: IBM *Point* of Sale Platforms, GSA, Supermarket, Chain Sales CLIENTS: Ralph's Grocery, Wegman's Foods, McCarty-Holman Co., Inc., Albertson's, ABCO Foods, A & P, Publix...

...more... COMPANY STATEMENT: MGV America has earned an international reputation as the leader in retail support systems. MGV's cornerstone marketplace is in the IBM *Point* of Sale platforms. Our productivity and support tools include: Automated Operator, Disk Optimizer, Screen Saver, Console Security, Test Sequencer, Background Task Manager, Remote Operator Extended...

...state of the art technology-based solutions for virtually all segments of retail. Most solutions are based on the open standard compliant Digital products, including *point* of sale terminals, kiosks, PCs and servers, as well as industry leading Alpha based workstations and servers. In addition to hardware and software, Digital and...

...broadest range of services available to retailers today, including maintenance, cost of ownership analysis, network integration and business process re-engineering. Applications are available for *point*-of-sale, imaging, inventory management, merchandising, shelf management, etc.

SUPERIOR ELECTRIC

WARNER ELECTRIC

Superior Electric 383 Middle Street Bristol, CT 06010 PHONE: (860) 585-4500...

...as the industry leader for variable transformers (tradename POWERSTAT(R)). Our advanced STABILINE(R) power conditioning products protect a wide range of sensitive electronics - computers, *point* of sale systems, LANs, mission-critical loads, etc. - from dangerous fluctuations in utility power, and can provide dependable battery backup in the event of aSales & Service of Re-manufactured *Point*-of-sale Equipment ADDITIONAL SERVICES: On Site Service, Depot Service, Help Desk, Support, Training, Trade In Assistance, Leasing clients: Retailers of all types and sizes...

...Service Organizations, VARs, Resellers, Dealers COMPANY STATEMENT: Systech Retail Systems is one of the largest sales and service companies in North America specializing in remanufactured *Point*-of-Sale equipment and peripherals of all makes and models, including current and mature product. Our strengths lie in our ability to purchase from end...

...bottom line profitability. For the ultimate in security, Checkpoint's Impulse(R) source tagging program embeds security labels within products or their packaging at the *point* of manufacture.

* SPACE MANAGEMENT SOFTWARE

Kwikee(R) Shelf Management Operations, a Division of: Multi-Ad Services, Inc. 1720 West Detweiller Drive Peoria, IL 61615-1695...

...state of the art technology-based solutions for virtually all segments of retail. Most solutions are based on the open standard compliant Digital products, including *point* of sale terminals, kiosks, PCs and servers, as well as industry leading Alpha based workstations and servers. In addition to hardware and software, Digital and...

...broadest range of services available to retailers today, including maintenance, cost of ownership analysis, network integration and business process re-engineering. Applications are available for *point*-of-sale, imaging, inventory management, merchandising, shelf management, etc.

* BAGS, BAG CLOSURES, BOXES

Handle Helper(TM)

Get a handle on your bagging costs.

Handle Helper...9310 CONTACT: Dale E. Jennings COMPANY STATEMENT: Pacific Handy Cutter, Inc. is the original manufacturer of the Handy Cutter, the Handy Hook Knife, the Safety *Point* Blade and the original Safety Cutter and NEW Safety Cutter S2. The Safety Cutter S2 features an ergonomic handle, safety guard, locked-in cutting positions, enclosed blade storage unit, patented Safety *Point* Blade and reduces accidents and damaged merchandise, insurance claims and workers compensation costs!

* CARTS

Four D, Inc. P.O. Box 240326 Apple Valley, MN 55124...

...or ordering. SPECIALIZATION: Four D, Inc. manufactures the following Small Comforts(R) products: Shop-Along Child Carrier, Shop-Along Infant Carrier, Diaper Changing Table, Diaper *Vending* *Machine*, Baby Wait Station, *Mobile* Diaper Changing Center, Cabinet Diaper Changing Center, Diaper Waste Receptacles, Changing Pads, Diaper Refill Kits and grocery cart Child Safety Straps. Custom colors available. Four...or ordering. SPECIALIZATION: Four D, Inc., manufactures the following Small Comforts(R) products: Shop-Along Child Carrier, Shop-Along Infant Carrier, Diaper Changing Table, Diaper *Vending* *Machine*, Baby Wait Station, *Mobile* Diaper Changing Center, Cabinet Diaper Changing Center, Diaper Waste Receptacles, Changing Pads, Diaper Refill Kits and grocery cart Child Safety Straps. Custom colors available. Four...

...21808 Eugene, OR 97402 PHONE: (800) 233-9663 FAX: (541) 688-5868 CONTACT: Chris Elliott SPECIALIZATION: Wood Display Fixtures for Wine/Liquor, Bakery, Housewares and *Point*-of-Purchase. COMPANY DESCRIPTION: Design and manufacture Oak, Maple and Douglas Fir display fixtures. No minimum purchase requirements for standard fixtures shown in our unique color catalog. Our durable fixtures are modular in design so you

can add options or rearrange as needed. Custom designs in volume including *Point*-of-Purchase.

* FLOORING/FLOOR CARE PRODUCTS

Buckeye International, Inc. 2700 Wagner Place Maryland Heights, MO 63043 PHONE: (800) 321-2583 FAX: (314) 298-2850 CONTACT...rackable, diamond or smooth deck, many models, sizes, and custom options. Grocery Transport Pallet accommodates warehouse, trailer or automated pallet dispenser. Call for free catalog.

* *POINT* OF PURCHASE DISPLAYS

California Quality Plastics 2226 Castle Harbor Place South Ontario, CA 91761 PHONE: (800) 523-8674, (909) 930-5535 FAX: (909) 930-5540 CONTACT: Lary G. Shipp, National Sales Manager COMPANY DESCRIPTION: Manufacturer of museum quality plastic *point*-of-sales displays, dispensers and organizers for grocery stores, convenience stores and the restaurant industries. We design and custom fabricate products using acrylic, styrene and...

...the full and half size permanent pallet display fixtures to promotional corrugated pallet skits, which house and enhance the presentation of palletized product at the *point* of sale. The units have several exclusive signage and header options designed to increase visibility and maximize impulse purchase. ADDITIONAL SERVICES/FEATURES/BENEFITS: * Units come...

...bottom line profitability. For the ultimate in security, Checkpoint's Impulse(R) source tagging program embeds security labels within products or their packaging at the *point* of manufacture.

KartControl(TM) P. ...increase sales of perishable foods. Hundreds of high-quality recipes for meat, produce and seafood as well as an extensive line of recipe racks. Other *point*-of-purchase materials include: produce & seafood guidebooks, POS cards, posters, static clings, brochures, shelf talkers, rail strips, kids promotional items and more. Official PBH distributor...Jacksonville, FL 32256 PHONE: (800) 874-1732 FAX: (904) 363-0300

* Question: Do You Want to Increase Sales 5%,
10%, 20% or More?

* Answer: Decorations

Point of Purchase Hardware

Corrugated Display Wrap For your free 92 page Catalog & Decorating Guide Call (800) 874-1732

WMG (Windsor Marketing Group) 2 Industrial Road...

...of the planning and preparation involved in designing programs and their enhancements for easy weekly implementation in-store. Our team of consultants, specialists in merchandising, *point*-of-purchase and in-store sign communications, work with design, pre-press and production experts, to help you create or adjust a program to stimulate...of the planning and preparation involved in designing programs and their enhancements for easy weekly implementation in-store. Our team of consultants, specialists in merchandising, *point*-of-purchase and in-store sign communications, work with design, pre-press and production experts, to help you create or adjust a program to stimulate...Floor care products

California Quality Plastics 2226 Castle Harbor Pl. S. Ontario, CA 91761 Phone: (800) 523-8674

(909) 930-5535 FAX: (909) 930-5540 *Point* of Purchase Displays

Campbell Software, Inc. 1603 Orrington Ave., Ste. 700 Evanston, IL 60201 Phone: (708) 328-3200 FAX: (708) 328-3459 Labor Scheduling/Time...

Epson America, Inc. OEM Division 20770 Madrona Avenue Torrance, CA 90509 Phone: (310) 787-6300 FAX: (310) 782-5350 E-mail: http://www.epson.com *Point* of Sale Systems/Software

The Facility Group Inc. 2233 Lake Park Drive Smyrna, GA 30080 Phone: (800) 525-2463 FAX: (770) 437-7554 Architects & Engineers Consultants Designers Facility Planning

Fasteners for Retail, Inc. 225 Alpha Park Cleveland, OH 44143 Phone: (800) 422-2547 FAX: (216) 473-6160 *Point* of Purchase Displays

Floratech Industries, Inc. 4003 Eastbourne Drive Syracuse, NY 13206 Phone: (800) 535-3295

(315) 438-8940 FAX: (315) 438-8943 Floral Fixtures Merchandising Equipment

MGV America, Inc. 900 Ridgefield Dr., Ste. 130 Raleigh, NC 27609 Phone: (800) 849-6482 FAX: (919) 790-8214 *Point* of Sale Systems/Software

Mibar Software Inc. 4950 Yonge St., Suite 512 Toronto, ON M2N 6K1 Canada Phone: (800) 387-9766 FAX: (416) 730-8060...

...2233 FAX: (714) 966-9310 Box Cutters

Pallet Display Systems 214 W. Erie Street Chicago, IL 60610 Phone: (312) 943-5959 FAX: (312) 943-0881 *Point* of Purchase Displays

Pat Henry Perceptions, Inc. 230 Huron Rd. NW #100.45 Cleveland, OH 44113 Phone: (216) 621-3831 FAX: (216) 621-8455 In...

...92713 Phone: (714) 476-2200 FAX: (714) 476-8403 Merchandisers

Pioneer Standard 4800 E. 131st Street Cleveland, OH 44105 Phone: (800) 227-1693 Networking Systems *Point* of Sale Systems/Software Warehousing Management

Powerforce Division of ACTMEDIA 303 East Ohio Street Chicago, IL 60611 Phone: (800) 327-7158 FAX: (312) 670-3529...

...313) 453-3604 Decor

Realistic Imaging LTD. 5290 N. Casa Grande Hwy., Ste. 117 Tucson, AZ 85743 Phone: (800) 845-0141 FAX: (602) 887-2629 *Point* of Purchase Displays

RefrigiWear, Inc. P.O. Box 39, Breakstone Dr. Dahlonega, GA 30533 Phone: (706) 864-5757 FAX: (706) 864-5898 Insulated/Protective Clothing...

...691-3071 Sweepstakes, Games, Contests

Semco, A Leggett & Platt Company 1904 NE 6th Avenue Ocala, FL 34470 Phone: (800) 635-7321 FAX: (904) 351-3088 *Point* of Purchase Displays

Sensormatic Electronics Corporation 500 NW 12th Avenue Deerfield Beach, FL 33442 Phone: (800) 368-7262 Security Systems/Safes

Simple Signman, Inc. 8475...

...800) 833-2278 FAX: (905) 624-3784 Carts

Superior Electric 383 Middle Street Bristol, CT 06010 Phone: (860) 585-4500 FAX: (860) 582-3784 Lighting *Point* of Sale Systems/Software

Systech Retail Systems 2044 North Highway 360 Grand Prairie, TX 75050 Phone: (214) 606-0307 FAX: (214) 660-1682 *Point* of Sale Systems/Software

Tecumseh/Bitzer L.P. 1120 Tecumseh-Clinton Road Clinton, MI 49236 Phone: (517) 423-8744 FAX: (517) 423-0233 Refrigeration Equipment...9963 FAX: (614) 228-8776 Food Service/Preparation Equipment

Westrex International 25 Denby Road Boston, MA 02134 Phone: (617) 254-1200 FAX: (617) 254-6848 *Point* of Sale Systems/Software

WMG (Windsor Marketing Group) 2 Industrial Road Windsor Locks, CT 06096 Phone: (800) 243-2747 In-Store Marketing Signs: Graphic

?t s23/3,k/3

23/3,K/3 (Item 1 from file: 349)

00738087 **Image available**

INTEGRATED *POINT*-OF-SALE AND INTERNET MULTI-APPLICATION SYSTEM AND METHOD OF USE THEREOF

SYSTEME MULTI-APPLICATION INTEGRE POUR *POINT* DE VENTE ET INTERNET ET PROCEDE D'UTILISATION D'UN TEL SYSTEME

Patent Applicant/Assignee:
CHIP APPLICATION TECHNOLOGIES LIMITED, Level 8, Ballarat House, 68-72 Wentworth Avenue, Surry Hills, NSW 2010, AU, AU (Residence), AU (Nationality), (For all designated states except: US)

Patent Applicant/Inventor:
MAC SMITH David, Chip Application Technologies Limited, Level 8, Ballarat House, 68-72 Wentworth Avenue, Surry Hills, NSW 2010, AU, AU (Residence), AU (Nationality), (Designated only for: US)
GARTON Ben, AU, AU (Residence), AU (Nationality), (Designated only for: US)
WESCOMBE Justin, AU, AU (Residence), AU (Nationality), (Designated only for: US)

Legal Representative:

BALDWIN SHELSTON WATERS, 60 Margaret Street, Sydney, NSW 2000, AU
Patent and Priority Information (Country, Number, Date):
Patent: WO 200051074 A1 20000831 (WO 0051074)
Application: WO 2000AU121 20000222 (PCT/WO AU0000121)
Priority Application: AU 998801 19990222
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG US UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 7688

INTEGRATED *POINT*-OF-SALE AND INTERNET MULTI-APPLICATION SYSTEM AND METHOD OF USE THEREOF
SYSTEME MULTI-APPLICATION INTEGRE POUR *POINT* DE VENTE ET INTERNET ET PROCEDE D'UTILISATION D'UN TEL SYSTEME
Fulltext Availability:
Detailed Description
Claims

English Abstract
...is adapted to interact with the data carrying devices (71) and to communicate with said host (72). A first sub-set of the terminals are *point* of sale terminals (74) which each operate in the manner described with reference to figure 3. A second sub-set of the terminals (73) are...

French Abstract
...communiquer avec les dispositifs de transport de donnees (71) et avec ledit processeur central (72). Un premier sous-ensemble de terminaux regroupe des terminaux de *point* de vente (74) fonctionnant chacun selon le schema decrit dans la figure 3. Un deuxieme sous-ensemble de terminaux (73) represente un dispositif informatique (75...

Detailed Description
TITLE: INTEGRATED *POINT*-OF-SALE AND INTERNET MULTI-APPLICATION SYSTEM AND METHOD OF USE THEREOF
FIELD OF THE INVENTION
The present invention relates to a Integrated *Point*-of-Sale (POS) and Internet
0
Multi-Application System and Method of use thereof.

The invention is an improvement which adds further functionality to the
...

...present day smart-card technology.

Further, known techniques for purchasing goods and services over the internet do
1@ C
not integrate searrilessly with the standard *point* of sale (POS) techniques. For example, in some circumstances, a trader may wish to provide a loyalty incentive program whereby the consumer is rewarded for
...
...ninal being adapted to interact with said data carrying devices and to communicate with said host, wherein a first sub-set of said terminals are *point* of sale terminals and a second sub-set of said terminals are computing means capable of interfacina to the internet for communication with an PCT...

...one preferred embodiment, the computing means are in the form of any combination of the following: personal computers; personal digital assistants such as palmtop and *handheld* computers; *mobile* phones; or electronic infon-nation kiosks.

According to another aspect of the invention there is provided a method for 1 0 manipulating data on a...carrying device" includes chip bearing devices such as contact smart-cards, contactless smart-cards, dual interface (combi) smart-cards, watches, rings, key nings, implants, keys, *mobile* phones, personal data PCT/AUOO/00121 assistants (*PDA*'s) and "virtual" storage devices such as electronic wallets, online databases, internet cookies and the like.

The preferred embodiment of the present invention allows numerous...

...is referred to in this document as a "programme".
The ability of the preferred embodiment of the present invention to integrate internet trade with.standard *point* of sale commerce via common loyalty and other applications, compares favourably to the prior art.

BRIEFDESCRIPTIONOFTHEDRAWINGS
A preferred embodiment of the invention will now be...each of the terminals 34. Some alternative embodiments of the invention accomplish communication between the host 33 and the terminals 34 by means of a *portable* data carrying device (not shown). The latter forrn of communication is especially suited for ten-ninals 34 located in remote areas where on-line connection may not be feasible, or for example, in an automated *vending* *machine* for which the establishment of an on-line connection would not be financiallv viable.

In another preferred embodiment (not illustrated) the terminal software runs at...is adapted to interact with the data carrying devices 71 and to communicate with said host 72. A first sub-set of the tenninals are *point* of sale terminals 74 which each operate in the manner described with reference to figure 3. A second sub-set of the terminals 73 are... capacity to communicate digital
inforination via an internet server 77, for example, electronic information klosks 78 or personal digital assistants 79 such as palmtop and *handheld* computers, can be used in the preferred embodiment as an interface to the internet.

As explained above, the standard (non-internet capable) system 30 illustrated...

...the preferred embodiment 70 to provide a highly
accessible and convenient system on which a consumer can trade seamlessly with a business via either a *point* of sale terminal or the internet. For example, the system of the ...types of transactions, in quick succession if necessary.

purchase a book in a bookshop, using the electronic purse application of the preferred embodiment in the *point* of sale terminal 74 at the shop, have a loyalty reward consisting of a discount applicable to the next purchase written to the data carrying...

...host 72, which is privy to transactions carried out on both the POS terminals 74, and via the interriet, provides the merchant with a single *point* of *management*. This allows the merchant to manage and analyse both intemet and POS transactions in an integrated fashion.
Although the invention has been described with reference...

Claim
... terminal being adapted to interact with said data carrying devices and to communicate with said host, wherein a first sub-set of said terminals are *point* of sale terminals and a second sub-set of said terminals are

computing means capable of interfacing to the internet for communication with an internet...

...according to claim I wherein the computing means are in the form of any one or more of the following: personal computers; personal digital assistants; *mobile* phones; or electronic inforination kiosks.

3 A method for manipulating data on a plurality of data carrying devices according to claim I or 2 wherein...

...Keyboard Memory SAM slots LE[
readers
/ 6
3 -7 -7
Compt@ng InternetI
Figure 5 Mews Server
I @1. 75
Dsta %
Carrying
Device
IS
1
Point r Host
. of e-- 1;z
/10 Sale .4
Terminal
70 z
I L@
/ 6
Personal
Figure 6 comp..
146ask 75 Internet
Server
Data
Carrying
Device
Personal
Digital
Assistant
70
Point Host -7Q
of
Sale
Terminal
INTERNATIONAL SEARCH REPORT International application No.
PCT/AUOO/00121
A. CLASSIFICATION OF SUBJECT MATTER
Int. Cl. G06K 19/07
According...
?t s23/3,k/4

23/3,K/4 (Item 2 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00731165 **Image available**
METHOD AND APPARATUS FOR REMOTE TELEPHONY SWITCH CONTROL
PROCEDE ET APPAREIL POUR COMMANDE DE COMMUTATION TELEPHONIQUE A DISTANCE
Patent Applicant/Assignee:
AERIS COMMUNICATIONS INC, 1245 S. Winchester Boulevard, Suite 201, San Jose, CA 95128, US, US (Residence), US (Nationality)
Inventor(s):
LADUE Christophe Karl, 912 Third Street, Santa Cruz, CA 95060, US
Legal Representative:
CALDWELL Gregory D, Blakely, Sokoloff, Taylor & Zafman, 7th floor, 12400 Wilshire Boulevard, Los Angeles, CA 90025-1026, US
Patent and Priority Information (Country, Number, Date):

Patent: WO 200044152 A1 20000727 (WO 0044152)
Application: WO 2000US1330 20000119 (PCT/WO US0001330)
Priority Application: US 99234612 19990120
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CR CU CZ DE DK DM EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MA MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT TZ UA UG UZ VN YU ZA ZW
(EP) AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE
(OA) BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
(AP) GH GM KE LS MW SD SL SZ TZ UG ZW
(EA) AM AZ BY KG KZ MD RU TJ TM
Publication Language: English
Filing Language: English
Fulltext Word Count: 24362

Fulltext Availability:
Detailed Description
Claims

French Abstract
...qu'une commande specifique d'une application qui est envoyee d'un ordinateur central a une station (213) eloignee via un reseau (102) de radiotelephone *mobile* cellulaire.

Detailed Description
... reserves all rights to the copyright whatsoever.

BACKGROUND OF THE INVENTION
Field of the Invention
The present invention relates wireless Cellular, Personal Communications Systems (PCS), *Mobile* Satellite, and Low Earth Orbit (LEO), Medium Earth Orbit (MEO), High Earth Orbit (HEO), Ellipsoid Satellites, and Geosynchronous Satellite networks. Specifically the invention relates to ...

...invention manipulates these various functions of MAP and TP for the purpose of maximizing switch, BSC and satellite station network bandwidth. The invention enables forward *mobile* and stationary communication terminal paging, *mobile* terminal velocity tracking, optimum base site management, and other important maintenance and testing functions, controlled from a remote location.

Description of Related Art
There are...

...invention provides for base site identification number retrieval, specific radio control channel forward pages, multi-gang telemetry unit pages, application specific command pages, anti-fraud *mobile* unit velocity tracking, *mobile* unit location approximation, specialized caller I.D. messages, and other such data event actions. Furthermore, the invention can cause specific forward analog and digital control and signaling channels to page *mobile* units and stationary that are operating in specific base site areas. Single base sites, base site groups, and entire cellular and PCS networks can be used to page a specific *mobile* or stationary communications unit or multiple units. The invention provides these flexible means and methods while simultaneously minimizing host network bandwidth usage. The invention also...

...These command sets are used to initialize maintenance and test positions from a remote location, such as a specialized SS7 IS-41 compatible service control *point* (SCP), or service switch *point* (SSP).

Specific IS-41 automatic roaming data packet protocols such as,

Registration Notification invokes, Registration Cancellation invokes, Qualification Directives and Qualification Requests can be manipulated...

...operational standard. In addition, the invention provides specialized TCP/IP internet formatted packets that contain the same command set information. These unique packets also contain *mobile* identification numbers (MIN) that are used for the forward paging actions, and other host network command sets that cause specific heretofore mentioned actions to be...

...still manually use the terminal while at the same time the terminals perform the inventions automatic functions. As such, these designated MMI terminals become a *point*-of-presence (POP) on a designated host SS7 network or internet network. Single MMI terminals, and cascaded groups of terminals embodied in Host Network Management Centers can be attached as single network nodes with global, cluster and node originating *point* codes (OPC) and destination *point* codes (DPC), that are recognizable as SS7 POPs.

The invention also provides for unique message usage's of SS7 signaling protocols that are embodied in...

...the purposes of the invention as embodied and broadly described herein, a means and method of providing SS7 based, and Internet based primary and secondary *mobile* identification numbers (MIN) for forward analog, and digital control channel forward pages. Manipulated forward messaging channel data characters in the form of dual tone multiple...

...and data channel messages cause specialized trigger events to occur in application specific, wireless data communications devices. The communications devices are configured as stationary and *mobile* telemetry, application specific wireless data communicators. The application specific data communicators are specially designed to support such applications as: electrical and gas meter reading, security system status reporting, fire protection system status reporting, *vending* *machine* status reporting, mail drop box status reporting, motor vehicle tracking and location monitoring, automobile anti-theft and recovery, and many other related wireless data applications...

...Transaction Capability Application Part (TCAP) protocols. These SS7 based TCAP protocols are controlled by a centralized IS-41 A, B and C compatible Service Control *Point* (SCP) data *management* hub facility, that operates within the network architecture of conventional public and private IS-41 based SS7 networks. These networks are provided to maintain complete connectivity between cellular, PCS and *mobile* satellite *mobile* switching centers (MSC) and satellite network ground control stations. Each designated MMI terminal contains a special internal or external modem or PCM/CIA or dialogic...

...Maintenance Position mode. This mode supports forward control channel paging, and/or forward messaging to be sent to a single designated or multiple set of *mobile* or stationary application specific data communicators. In addition, the Maintenance Position terminal is connected to a wireline or wireless telephony switch maintenance port, and interacts...

...such as Qualification Directives, Qualification Requests, Registration Notifications, Registration Cancellations, and Service Profile Directives. These SS7 based protocols normally support specific types of Service Control *Point* (SCP) and/or Service Switch *Point* (SSP) data information. The invention utilizes the conventional packet configuration, while at same time manipulating the existing data structures contained within; to cause an enabling of new Maintenance Position instruction sets. These instruction sets are transmitted from a specialized Service Control *Point* (SCP) data *management* hub to a designated MMI terminal that is an IS-41 SS7 node that has its own global, cluster and node based; originating *point* code (OPC) and

destination *point* code (DPC).

In accordance with the invention, a specialized SCP manipulates and transmits a standard but modified Qualification Directive data packet to a designated Visitor Location Register (VLR) that is an associated network element with the currently serving MSC(s). Contained with this packet is a *mobile* identification number (MIN) and a *Mobile* Serial Number (MSN) and other data information, that is part of a comprehensive user roamer profile. Once the VLR receives the profile, it changes its...

...one MSN. This method creates a new use for forward pages, and in no way inhibits or causes any algorithmic conflict with normal stationary or *mobile* application specific communicator authentication. Once the VLR profile is updated the invention prepares another modified Qualification Directive data packet. This packet is sent to a...

...and Maintenance Position-multitasking software. Contained within this particular modified Qualification Direction are program instructions, and specific forward paging information such as the 10 character *mobile* identification number (MIN), and the eight character *Mobile* Serial Number (MSN). Once the MMI terminal receives the manipulated Qualification Directive, the MMI initializes its specialized Maintenance Position program, and causes the contained MIN to be forwarded from the MMI to the host wireless telephony switch to page a group or a single stationary or *mobile* application specific data communicator. This is accomplished without causing a public switched telephone network (PSTN) voice call pathway to be established, or other host network...

...the invention to utilize IS-41 Registration Notification invokes and Registration Cancellation invokes in order to facilitate a unique means and method of utilizing multiple *mobile* identification numbers (MIN) with one application specific wireless communications device. This specially configured application specific device operates in a conventional cellular, PCS or *mobile* satellite wireless network. These networks are interconnected via the PSTN and public and private SS7 networks. The invention provides for an innovative integrated usage of PSTN network infrastructure, SS7 network infrastructure and cellular, PCS and *mobile* satellite switching platforms. The invention combines various conventional processes and procedures that enable the means and methods of delivering application specific commands and instructions to wireless devices operating in cellular, PCS and *mobile* satellite networks. For example the invention manipulates temporary location directory numbers (TLDN) in a unique way.

In conventional cellular networks a roaming *mobile* is assigned a TLDN when it accesses the currently serving cellular network. The TLDN is assigned to a roaming user, and entered into a user...

...structures. The TLDN is usually comprised with a local network assigned area code, and office code. When a roaming cellular user receives a land-to-*mobile* call the TLDN is used by the local telephone service provider to 'dial' the roaming *mobile* user. When the TLDN is received by the currently serving cellular network, its associated VLR causes the associated MSC to page the *mobile* with its permanently assigned MIN over the analog FOCC forward control channel. In the case of the invention's application specific communicator, the MIN is...

...an innovative means and method of delivering forward pages and forward messages to wireless application specific communicators that are operating in a cellular, PCS or *mobile* satellite network without incurring PSTN or wireless network airtime charges. The invention creates a completely secure means of delivering forward messaging, since the 100-199...

...algorithms are manipulated for the purpose of enabling message/page call delivery (MPCD) to a wireless communicator without incurring currently serving PSTN, cellular, PCS and *mobile* satellite wireline and wireless

network call duration charges. The invention's MPCD messaging method operates within all known national and international wireline and wireless telephony...

...PCM/CIA based. These cards are ported to the world wide web (WWW). The specialized SCP-HUB also enables remote command and control of host *mobile* switching center (NSC) switches via the intemet.

It is an object of the invention to provide innovative application specific communicator velocity tracking via unique creation...

...The use of 100 to 199 NPAs uniquely enables this preferred embodiment. This scheme can also be used for accessing C block PCS carriers, and *mobile* satellite carriers.

The inventions wireless application specific communicator software and firmware means are specially configured to detect 'access allowed' or 'access denied' by monitoring specific...voice channel is seized for over two seconds. This factor indicates to the communicator that it must attempt access with another cellular, or PCS, or *mobile* satellite network.

Another important object of the invention is to provide forward messaging in a cellular, PCS or *mobile* satellite via digital caller identification messaging (CID). The invention provides the means and method of sending a page message in the form of caller I...
...that recognizes this CID message. The message contains specialized instruction commands. These commands are structured to emulate a ten digit directory phone number or a *mobile* identification number (MIN). Upon the reception of this number, the communicator activates its specialized software to modify operations of a connected device, and/or prepare...

...message to be transmitted to the SCP-HUB. The application specific communicator transmits this status response message to the associated cellular, PCS base site, or *mobile* satellite. This status response message can be formatted for caller I.D./PSTN access or SS7 network access.

When the cellular or PCS base site or space-bome satellite receives the status message it relays it to the associated *mobile* switching center (MSC) or satellite network ground station (GS). When the MSC or GS receives the message, its translation databases analyze the data, and then...

...communicators. The application specific communicator can also transmit application specific status response messages to the inventions SCP-HUB by a currently serving cellular, PCS or *mobile* satellite network wireline and wireless infrastructure. The application specific communicator requests conventional remote feature access control or other related call services, and transmits the specially...

...and forwards it to the SCPHUB via caller I.D./PSTN network elements or the associated SS7 network elements.

The currently serving cellular, PCS or *mobile* satellite network receives the call message on the RECC control channel or other means. It then sets up a call to the designated PSTN node...

...line long distance charges, or cellular air time charges. The inventions modified and manipulated caller I.D. data operates bidirectionally via PSTN, cellular, PCS and *mobile* satellite networks without incurring any network air time or landline costs.

Another object of the invention provides for using extended protocols provided under the guidelines...

...The invention also provides for a unique usage of autonomous registration increment specified in Interim Standard 553. IS-553 is a specification that encompasses cellular *mobile* radio operations and cellular base site operations for the analog American *Mobile* Phone System (AMPS). In one scenario the invention provides the means and method of creating a message/page call delivery event (MPCD). A conventional *mobile* cellular radio is assigned and will recognize no more than two *mobile* identification numbers (MIN). When a conventional *mobile* cellular radio operates in a given cellular market or operational area, it never utilizes more than one MIN number. The invention provides the means and...system network elements, according to the invention.

Fig. 5 is a block schematic of the preferred embodiment of the RTSC system interacting with multiple cellular *Mobile* Switching Centers, according to the invention.

Fig. 6 is a block schematic of the RTSC protocol flow from the SCP-HUB to other RTSC network...

...16, depicts Caller I.D. manipulated word formats, parameter types and message types according to the invention.

Fig. 17, depicts a manipulated IS-553 AMPS *mobile* radio to base site access, according to the invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS OF THE INVENTION

Reference will now be made in detail...a uniquely modified SS7 IS-41 compatible SCP-HUB, a modified MMI Maintenance Position computer terminal, which is co-located at a cellular, and, PCS *mobile* switching center (MSC), or multi MSC cellular carrier network management center. The MMI ten-ninal is connected to switch fabric via a maintenance port or ...

...register (VLR) via a switch fabric data link. This action causes a standard user profile to be modified by replacing the currently listed 10 digit *mobile* identification number (MIN) with up to 20 additional MINs, inserted one-ata-time. This action is accomplished while maintaining consistent listings of the same eightcharacter *Mobile* Serial Number (MSN), also known as an Electronic Serial Number (ESN).

Secondly, the RTSC system commands the SCP-HUB to send an additional SS7 SCP-HUB Qualification Directive data packet to the associated MMI Maintenance Position computer terminal. Contained within this Qualification Directive data packet a specialized 10 digit *Mobile* Identification Number (MIN), and the normally assigned MSN. The MMI is connected to an MSCs or host network management center maintenance port or test port...

...set of communicators simultaneously. In this way the RTSC system can cause up to twenty different MIN pages to be sent to a stationary or *mobile* application specific communicator. These page messages or MPCDs can be primarily formatted in conventional BCH block code d ata, or be configured for dispersal in...

...in turn the MSC is connected to a host SS7 network via an MSC data link. The MSC is an SS7 network element service switch *point* (SSP). The MSC relays these application data status packets back to the SCP-HUB via a IS41 compatible SS7 network data link. The SCP-HLJB...

...specific communicator controls such as specific access assignment to cellular and PCS carrier's whose operational footprints overlap one another. This controls which network the *mobile* application specific communicators status response packet is allowed to access, such as the A side cellular carrier, or B side cellular carrier, or PCS C-block, or *mobile* satellite carrier operating in a given metropolitan statistical or service area (MSA) that covers a specific city or region.

Referring to Fig. 1, the Remote...

...serving VLR entries. The term 'user' in the context of the RTSC system simply relates to whether the particular application-specific data communicator is a *mobile* unit, or a stationary unit. These units are not typically manned. Additionally, the user information stored in the DLR and other subsystem data-bases will indicate what type of application specific communicator is involved; electrical meter reading, motor vehicle fleet management, *vending* *machine* status reporting and many others. Once the DLR interrogation is complete, the NMS subsystem creates a two-packet forward page-trigger-status response event 55...41/SS7 Qualification Directive, Registration Notification, or Registration Cancellation is prepared 57.

Referring to Fig. 8, depicts a IS-41 based SS7 network signaling system *Mobile* Application Part-Transaction Capability Application Part (MAP-TCAP) Qualification Directive packet 121. This packet can also be configured as a Registration Notification or Registration Cancellation...

...networks that adhere to IS-41, A, B and C standards. Additionally, a derivative of this packet 121 is used by the Global System for *Mobile* (GSM) signaling network data links.
Therefore, The RTSC Qualification Directive that is specially modified for the purpose of enabling specialized forward pages and specialized VLR entries that will work seamlessly *Mobile* Serial Number (MSN) 122. Other conventional information includes System Type codes, Qualification information codes and other types 123, and 136. Some codes are mandatory and...

...is co-located at the currently serving MSC or carrier network management center, and is deemed an SS7 network node with its own assigned destination *point* code (DPC) and originating *point* code (OPC). The MMI MAP software then examines the Qualification Directive packet's MIN and MSN fields 122, and retrieves the MIN information. Once the...

...page trigger event packet, commensurate with the host cellular, or PCS switch-fabric data communications standard, that is utilized by the currently serving switch platform. *Mobile* satellite ground station switch standards are also considered in accord with the present invention. *Mobile* satellite systems include but are not limited to, the Microsoft Teledesic LEO system, The 66 satellite Iridium Leo system, Inniarsat A, B, M, and P formats are compatible with the invention. The American *Mobile* Satellite Communications (AMSC) net work for LEO and Geosynchronous systems is also compatible with the invention. The invention will work seamlessly in these aforementioned satellite networks. Therefore, satellite based application specific data *mobile* and stationary telemetry communicators can receive forward page-trigger event packets in the same means and method as cellular and PCS *mobile* and stationary communicators.

Referring to Fig. 1, once the IS-41/SS7 Qualification Directive for VLR user profile entry/update is prepared 57, and the...

...network data link 59. This specific action clears the previous VLR user profile entry. A typical VLR user profile entry is made when a roaming *mobile* registered in its associated currently service MSC. Since all *mobile* or stationary application specific communicators are deemed 4roamers,' manipulation of user profiles of the VLR is critical. When the *mobile* or stationary application specific communicator registers, or transmits a status response data packet event, the currently serving MSC, analyses it received MIN and determines that...

...data.

Another important feature of the invention combines SS7 network manipulation, VLR service profile manipulation, and specialized PSTN MPCD manipulation. In some cellular, PCS or *mobile* satellite networks usage

of a modified MM1 MAP terminal is not required.

The invention uniquely combines SS7 network, PSTN, and SS7 node in integrated manipulation scheme, that in fact, creates an additional application specific network overlay for forward page and communicator message delivery for cellular, PCS and *mobile* satellite networks. This unique manipulation scheme enables multiple MIN authentication; via SS7 and IS-41 automatic roaming procedures. By manipulating these aforementioned features, further manipulation...

...Cellular networks experience thousands of incomplete calls. The invention uses incomplete calls to enable MPCD procedures, and to produce additional revenue for cellular, PCS and *mobile* satellite carriers without the need to add equipment, software or other infrastructure elements to these existing networks. In addition the inventions MPCD procedure creates an...

...a MIN message. These six protocol levels that interrelate and communicate with one another operate within the parameters of conventional PSTN, SS7, cellular, PCS and *mobile* satellite networks, comprise the inventions core MPCD system protocol. The MPCD protocol system is in fact a sub protocol that further supports, and reduces to ...the DLR 162. In fact with the addition of this special data processing stack, the invention creates a completely new approach to SS7 service control *point* (SCP) design, and operation. Typically conventional SS7 SCP nodes are inherently rigid in terms of how IS-41 automatic roaming packets are processed. The invention...

...flexibility enables a new list of application specific wireless-data-services.

The DLR is also configured to add a date and time code 'stamp' each *mobile* application part/ transaction capability application part, (MAP/TCAP) packet arrives from a VLR, HLR, SSP-switch, MSC or any other SS7 node. Every time a...

...to detect, receive and analyze caller I.D. formatted messages (CID) 172, as depicted in Fig. 4. These CID messages 172 were originally designated for *mobile* cellular radios that support the reception and transmission of control data via analog control channels, and voice services on analog voice channels, and CDMA and...

...such as command invokes and other information designated for forward transmission to communicators that are integrated to such devices as a GPS receivers, power meters, *vending* machines or other such apparatus. This particular base site for example, is configured to provide IS-136 TDMA digital traffic channel services, in addition to...processing structures of the DLR and the comparative data base/ stack, is user profile information that consists of; the communicators assigned 20 MIN numbers, and *Mobile* Serial Number (MSN), a temporary location directory number (TLDN) that is an associated 10 digit directory number. This associated 10 digit directory number is configured...

...registration data structure. This structure is the autonomous registration packet so specified in IS-553, the standard that encompasses the AMPS cellular base site and *mobile* radio operating protocols.

After the radio transmits its autonomous registration packet to the associated base site of the currently serving cellular system, certain user authentication...

...TLDN to the 'roamers' user profile database and forwards the TLDN information to the 'home' systems associated HLR.

When a local home area land-to-*mobile* caller dials the cellular radio users MIN, the associated land telephone network (LTN) sends the call request to the local cellular MSC that is associated...

...sets up a switch route pattern to the currently serving base site and invokes a forward page via an associated base FOCC control channel. The *mobile* cellular radio responds to the page with a ring tone, and the user picks up the radio handset, presses the send button, therefore completing the land-to-*mobile* call procedure.

The present invention completely manipulates the aforementioned call procedure in such as way that a new forward messaging system becomes enabled and created...that MIN and MSN combination that is presently active, is different than the first MIN and MSN number contained in the MPCD page request. The *mobile* subscriber number (MSN) also known as an Electronic Serial Number (ESN) is listed in the user profile, and is an essential information element used for...serving base site receives forward page data-packet from the associated MSC switch 66. The base site subsequently transmits a forward page to a designated *mobile* or stationary communicator via a designated air interface data link 67. In fact the inventions RTSC MMI MAP system ...and method. After reception of the forward page, the application specific communicator analyses the MIN and responds appropriately to its internal program structures 68. The *mobile* or stationary application specific communicator then prepares an appropriate status response data packet 69. Next, the communicator transmits status response data packet via an analog site identification and *mobile* communicator velocity tracking, specialized switch bandwidth management, and specific forward base site channel management, that enable designated forward channel pages. Other specialized functions include custom...

...and data traffic.

This large cellular, or PCS network also consist of a carrier network management center 117, with its own associated SS7 signaling transfer *point* (STP) 109a. Contained within the carrier network management center is a plurality of the invention's specially modified MMI MAP terminals 114. There is no...

...connected to the ASP via the internet worldwide web (WWW) II 0.

Referring to Fig. 4, it depicts a cellular, and/or PCS and a *mobile* satellite network.

The SCP-HUB 106 is interconnected to an MMI MAP terminal 114d, via its associated STP 109c, and an SS7 data link 115...firmware and software means that enables data communications between cellular or PCS networks analog, digital control, and signaling air interface channels. The communicator also uses *mobile* satellite network space segment control, authentication side bands and signaling channels. The invention operates in the depicted satellite network in the same manner that it...

...actions. All of these aforementioned modifications can be enabled without circumventing any conventional host network operating standards.

Other important features of the invention include tracking *mobile* application specific communicators in a cellular and PCS host network environment. This is enabled by identifying the particular base site that is serving a particular...

...SS7 data link.

Referring to Fig. 4, there is depicted the inventions SCP-HUB 106, its specialized switch 108 and other associated network elements. Three *mobile* application specific communicators 100a, 100b, and 100c are operating in a designated cellular network. There are multiple base sites 128, 129, 130, 131, 132 and...and BSC with specifically assigned T-carriers, port numbers and other details. Therefore this information can be used to establish a general location of the *mobile* application specific communicator. This information is used for anti-fraud purposes

and emergency 91 1 services.

In some cases an application specific communicator is combined...

...general location using the inventions means and methods will sufficiently surfice
Referring to Fig. 4, the inventions anti fraud feature is unique. For example one *mobile* communicator 100b has its own MIN and MSN. It transmits its REGNOT packets and application specific data packets. Each of these packets always contains the MIN and MSN information. If for example, the *mobile* communicator 100c is a cloned communicator. This communicator is operating illegally with a duplicate MIN and MSN that matches the authorized *mobile* communicator 100b. If the base site 130, where the cloned *mobile* communicator 100c is located twenty miles down range from base site 129, where *mobile* communicator 100b is operating the invention detects and reports the disparity. Both communicators have the same MIN/MSN combination. The inventions DLR 162 has specialized...

...in the application specific user profile record every time a packet passes through its internal data processing structures.

The network management subsystem 105 maintains a *mobile* application specific system
MAP terminal 114b sends both the authorized *mobile* communicator 100b and the cloned communicator 100c information back to the SCP-HUB via the modified IS4I/SS7 Qualification Request ...MSN and ESN appears at a base site twenty miles down range. The Network Management Subsystem 105 detects the disparity and automatically shuts down both *mobile* application specific communicators.

SCP-HUB personnel notify the host carrier, the associated application service provider (ASP) and contact law enforcement authorities.

Referring to Fig. 9...

...8. The empty data fields 124, 125 and 126 can be used to send the aforementioned billing statistics to the SCPHUB for, processing and determining *mobile* communicator positioning and tracking. The MMI MAP terminal reads this information from various switch elements that manage and control these billing statistics. This information is...
...IS-41 SS7, TCP/IP or ATM protocols and relayed back to the SCP-HUB.

The invention also provides for the control and management of *mobile* applicationspecific communicators that are operating in multiple cellular network operational areas. This is especially valuable where one cellular or PCS footprint overlaps on another. This...

...overhead data stream of the forward control channels. This overhead denial parameter causes the application specific communicator to automatically switch to another cellular, PCS or *mobile* satellite network on a preferred basis without any further intervention from the SCP-HLJB.

Referring to Fig. 12, depicted here is a status response data...

...MIN enables application specific unique application specific communicator operations. These unique operations are enabled when an access is attempted in any given cellular, PCS or *mobile* satellite host network.

Referring to Fig. 12, the C word 148 of the REGNOT part 143 contains the eight character *Mobile* Serial Number (MSN) 158 and used along with the MIN to identify and authenticate application specific communicators. This MSN is used by MSCs, and VLRs...

...words contain such application information 159 as Global Positioning System (GPS) longitude and latitude information. The data word can also

include electrical meter status information, *vending* *machine* status and inventory information, and many other type of application specific information. This part of the packet is sent when an application specific communicator transmits...element that is co-located with the specialized application specific SCP-HUB 106. The DLR 162, checks its own user profile data base, examines the *mobile* serial number (MSN) contained in the C word 148 that is shown in Fig. 12, and determines that this particular Registration Notification packet with its...

...detects a special command MIN originally sent from the SCP-HUB 106, its associated the MMI MAP terminal 114b, and its associated cellular, PCS or *mobile* satellite network. The DLR 162 maintains the aforementioned user profile that has currently serving host network location information. This unique forward paging feature causes application...

...trigger a selection between A, or B, or C block cellular or PCS carriers.
These same algorithms can cause the communicator to also select a *mobile* satellite network for service when appropriate.

Referring to Fig. 5, the invention can ...and its associated VLR 135c, and MMI MAP terminal 114c are configured for IS While the Dallas PCS network is configured for Global System for *Mobile* (GSM) time division multiple access (TDMA) digital cellular services. Each cellular or PCS operating area is joined by an SS7 network, and the inventions MMI...

...installed in an associated switch equipment rack The card contains the inventions modified MAP software.

The card is also an SS7, internet, or ATM network *point*-of-presence. The card operates exactly in accord with the aforementioned MAP software processes and procedures.

The invention provides a complete bi-directional forward and...

...data information that is transmitted over the air interface of forward and reverse analog and digital control channels that are used in cellular, PCS and *mobile* satellite networks. The invention also provides for manipulation of caller I.D. information over the air interface of forward and reverse analog and digital voice or traffic channels that are used in cellular, PCS and *mobile* satellite networks. The invention also provides for the manipulation of caller I.D. data over PSTN trunks that are linked to modified premise equipment (MPE...

...of status reporting event. The communicator therefore enables the means and method of becoming modified terminal equipment (MTE).

The invention further manipulates cellular, PCS and *mobile* satellite 'call statistics' in a unique and innovative manner. Specifically, the invention manipulates 'incomplete calls' during the forward MPCD data message delivery, and 'drop calls...

...associated base site and finally to the modified terminal equipment (MTE) integrated within the ci rcuitry structure of the application specific communicator. When a conventional *mobile* radio is being paged, the associated MSC and base site has previously assigned a forward and reverse voice channel to that radio. When the user...forwards it to the SCP-HUB 106 via an SS7 link 115. The 175 NPA is equated with the DLR's 162 SS7 based destination *point* code (DPQ. The MSC 102 uses this *point* code to route the packet to the DLR 162 via the associated SS7 network. This packet can contain both caller I.D. data bits and...
...name' message can contain such data as global positioning system (GPS) longitude and latitude location information, electoral power meter readout bits, motor vehicle status bits, *vending* *machine* inventory status, security system status reporting bits and other such information. However since the MPE 212 did not 'pick up' the call before going off... uses the 'on-hook' status of wireless and wireline terminal equipment in

order that the RTSC system and service does not incur cellular, PCS or *mobile* satellite air time charges.

In addition, the invention uses the 'on-hook' status of the terminal equipment insures that there are no PSTN long distance...

...HUB can therefore send application specific data packets that contain 'date & time' information to designated application specific communicators. This delivery can be accomplished in a *point*-to-*point* means and method or *point*-to-omni *point* broadcast means. When the communicators receive the 'date & time' caller I.D. information, they record the information and if necessary reset the communicator and/or...

...addition to the data only services. Therefore MDMF caller I.D. messages can be sent the inventions communicators that support circuit switched cellular, PCS or *mobile* satellite voice services.
Referring to Fig. 2, the invention provides a complete bi-directional application specific data service that requires no additional infrastructure elements, or...

...any wireless and wireline network that supports conventional caller I.D. services. The invention can deliver manipulated caller I.D. data via cellular, PCS and *mobile* satellite analog and digital control channels, and analog and digital traffic channels. All of this data is managed by the inventions SCP-HUB 106. The...

...configured for IS-95 CDMA 197 services, or IS-136 TDMA 196 services. The inventions manipulated caller I.D.

RTSC system, fully supports application specific *mobile* satellite services via a satellite 107, a satellite compatible communicator 100a, and its associated ground station (GS) 104.

Another important aspect of the invention is...unique manipulation of the voice channel assignment task. As a result of this innovative manipulation, the application specific communicator never occupies a cellular, PCS or *mobile* satellite voice channel.
Referring to Fig. 17, The invention's communicator 100 transmits a Modified Remote Feature Access Control packet (MRFAC) 157 to the currently...

...specific communicator 100. Contained within this message is an Initial Voice Channel Designation Message (IVCDM) 220 as specified by certain IS-553 AMPS land-to-*mobile* and *mobile*-to-land intercommunications standards 228 section 3.

7 1.

The communicator 100 and its firmware 218 respond to the reception of the IVCDM 220 with...

...to the IVCDM 220 with a designed voice or traffic channel mismatch (VCHM) 229. This VCHM acts in the same way as if a conventional *mobile* station that is set to a preferred system such as the A side, and tries to access and match a voice channel on the B...

...any way. Furthermore, this action occurs entirely within the confines of internal firmware and software structures and in no way effects the cellular, PCS or *mobile* satellite that is serving the application specific communicator. The invention manipulates the standard within its structures, however the cellular system that serves the communicator is ...

...228 and within the radio itself 218.

The SSD task 224 is initialized only if the radio wants to access another serving cellular, PCS ort *mobile* satellite system. If not, as in this

case, the radio goes to standby or 'idle task' 225 as specified in IS-553 228. In this...

Claim

I A method of communicating a command from a central host to a remote station via a cellular *mobile* radio network, comprising: a) sending the command from the central host to a network switch, the command comprising a *mobile* identification number (MIN) and an electronic serial number (ESN); b) querying a database associated with the network switch to locate the remote station, the query...

...remote station to the database associated with the network switch, the report specifying the MIN and ESN; 2) reporting to a database associated with a *mobile* switching center (MSC) serving a remote station identified by the ESN that the remote station is no longer being served by the MSC, the report...

...the MIN and ESN.

9 The method of claim 1, wherein sending the command from the host to a network switch, the command comprising a *mobile* identification number (MIN) and electronic serial number (ESN), comprises sending the command from the host to a network switch via a public switched telephone network ...

...a network switch, the command comprising a MIN and ESN, comprises sending the command from the host to a signaling system 7 (SS7) service switching *point* (SSP) via a public switched telephone network, the command comprising a MIN and ESN.

4 The method of claim 2, wherein sending the command from...

...a network switch, the command comprising a MIN and ESN, comprises sending the command from the host to a signaling system 7 (SS7) service switching *point* (SSP) via a local area network, the command comprising a MIN and ESN.

5 The method of claim 2, wherein sending the command from the...

...a network switch, the command comprising a MIN and ESN, comprises sending the command from the host to a signaling system 7 (SS7) service switching *point* (SSP) via a Transport Control Protocol/Internet Protocol (TCP/IP) based-interrietwork, the command comprising a MIN and ESN.

6 The method of claim 2...Association Interim Standard 41 (TIA/EIA IS-41).

19 A method of communicating commands from a central host to remote stations via a cellular *mobile* radio network, comprising: a) sending a command from the central host to a network switch, the command comprising a profile, wherein the profile sets forth call capabilities; b) querying a database associated with the network switch to identify a remote station in the cellular *mobile* radio network having call capabilities matching the profile; C) if the database associated with the network switch does not identify a remote station having call...

...that match the profile, then: 1) reporting the profile to the database associated with the network switch; 2) reporting to a database associated with a *mobile* switching

center (MSC) serving a remote station whose call capabilities match selected call capabilities set forth in the profile that the remote station is no...

...QuolDir Creates Appropriate Sends Page to BS Page From Des Page Invoke. Page Protocol. Through SW Fabric. SW/MSC. Sto, 68-) 69) 70-) 71
F
Mobile or Stationary *Mobile* or Stationary *Mobile* or Stationary erving I
am. Responds to am. Prepares Corn. Transmits Statu Status eceived Page. totus Respon Response Pocket. Pocket. 1 72-) 73-) 74.) 75...

?t s23/3,k/5

23/3,K/5 (Item 3 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00542297 **Image available**

UNIVERSAL INTERACTIVE ADVERTISING AND PAYMENT SYSTEM FOR PUBLIC ACCESS ELECTRONIC COMMERCE AND BUSINESS RELATED PRODUCTS AND SERVICES

SYSTEME DE PAIEMENT ET DE PUBLICITE INTERACTIF UNIVERSEL POUR COMMERCE ELECTRONIQUE A ACCES PUBLIC, ET SERVICES ET PRODUITS D'AFFAIRES ASSOCIES

Patent Applicant/Assignee:
USA TECHNOLOGIES INC,
Inventor(s):
KOLLS H Brock,

Patent and Priority Information (Country, Number, Date):
Patent: WO 200005670 A1 20000203 (WO 0005670)
Application: WO 99US8577 19990419 (PCT/WO US9908577)
Priority Application: US 9893475 19980720; US 99293358 19990416; US 99293129 19990416
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 23396

Fulltext Availability:
Detailed Description
Claims

English Abstract
The present invention relates to a universal advertising and payment system for networking, monitoring and controlling electronic commerce and *vending* equipment. The system can effectuate electronic commerce and interactive advertising at the *point* of sale. *Vending* equipment includes copiers, phones, facsimile machines, printers, data-ports, laptop print stations, notebook computers, palmtop computers (PALM PILOT), microfiche devices, projectors, scanners, cameras, modems, communication access, personal computers (PC), PC terminals (NET PC), and network computers (NC). *Vending* equipment can be networked to each other through a first network, programmable and accessible by a PC, server, *point* of sale (POS) system, property or management information system (PMS/MIS), and networked to a second network. The first network and second network can be the same network. Complete control of a *vending* *machine*'s functionality including usage, control, diagnostics, inventory, and marketing data capture can be effectuated locally or by remote connection to the network. Remote connection to...

...and other wire and wireless transmission. The present invention allows a user to obtain authorization for use, pay for products and services, and configure the *vending* equipment with a smart card, or magnetic card (card). Magnetic cards include smart card, credit card, debit card, pre-paid, automated teller machine (ATM) or...

French Abstract

...L'equipement de vente comprend des copieurs, des telephones, des machines de telecopie, des imprimantes, des bus de donnees, des stations d'impression pour ordinateur *portable*, des ordinateurs portables, des ordinateurs de poche (PALM PILOT), des dispositifs de microfiches, des projecteurs, des scanners, des appareils de photographie, des modems, des acces...

...de vente peut etre mis en reseau a l'aide d'un premier reseau, programmable et accessible par un PC, un serveur, un systeme de *point* de vente (POS), un systeme d'information de gestion ou de propriete (PMS/MIS), et passe sur un second reseau. Le premier et le second...

Detailed Description

... a universal advertising and payment system for networking, monitoring, collecting data, selling goods and services, controlling interactive advertising, controlling and effectuating electronic commerce and controlling *vending* equipment.

The present invention also relates to physical and virtual networking of *vending* machines and network hardware, server based network control, and network security. The present invention can be implemented in a manner to allow operational monitoring and control of networks (and network hardware), *vending* machines, electronic commerce, payment for goods and services, and advertising worldwide.

BACKGROUND OF THE INVENTION

Today, business centers have begun to emerge in hotel lobbies...

...ATM") or other bank or private issued card. Coin-cashcard systems are well known for copiers, however, for faxing, PC's, and other types of *vending* equipment and services, reliance on these types of systems alone can be awkward and in certain situations impractical. As a result, certain services such as burden. For example, in many retail outlets the store is managed from a *point* of sale terminal ("POS") system. A business center that can not be integrated into the store's POS system, can add an additional level 1...

...a lack of security/safety to equipment and money accumulating in coin boxes.

Furthermore, inadequate payment systems can result in reduced profits, limited functionality of *vending* products and services. Cash and coin systems can increase reliance on service attendants required to collect money from the coin boxes.

Deficiencies and shortcomings that...

...the inability to implement and offer a worldwide brand/loyalty program to customers, and the inability to have interactive marketing (advertising) distributed worldwide at the *point* of sale. Further shortcomings include the inability to integrate into or retrofit onto existing POS and PMS/MIS systems, as well as other retail, management...

...method for a universal control and payment system to distribute and display interactive advertising, conduct electronic commerce, and control the billing for the use of *vending* equipment. *Vending* I 0 equipment can include copiers, phones, facsimile machines, printers, data-ports, laptop print stations, notebook computers, palmtop computers (PALM PILOT), microfiche devices, projectors, scanners...

...desk routine 1200 flowchart.

Figure 15 shows an advertising routine 1300 flowchart.

Figure 16 shows a printing routine 1400 flowchart.

Figure 17 shows a POST-*VEND* transaction processing routine 1500 flowchart.

1 5 Figure 18 shows an error detection routine 1600 flowchart.

DETAILED DESCRIPTION OF THE INVENTION
Figure 1 shows an overview of the universal interactive advertising and payment system for *vending* of public access electronic commerce and business related products and services.

The universal interactive advertising and payment system is a computer program which may reside in a carrier, such as a disk, diskette or a modulated carrier wave.

A *vending* *machine* is defined as any piece of equipment in which products and/or services can be rendered therefrom. Referring again to Figure 1, control of a *vending* *machine* (referred to as *VENDING* *MACHINE* USAGE) can involve a first step of denying usage, access, service, or products from the *vending* *machine* as shown in step 10. Next, in step 20 the system accepts user input (data and/or monetary, disclosed herein as PRE-*VEND* TRANSACTION DATA (i.e. "AUTHORIZATION")), and then in step 30, the system authenticates or verifies the user's input to determine if *VENDING* *MACHINE* USAGE is "authorized." If, in step 40, *VENDING* *MACHINE* USAGE is "authorized" the processing proceeds to step 50. In step 50, the system effectuates the delivery, monitoring, and dispensing of the product, and/or service.

Then, in step 60, the system processes the POST-*VEND* TRANSACTION DATA to effectuate user (customer) billing, and account maintenance. Lastly, in step 70, the system "settles" (effectuates the transfer of funds, i.e. payment) the POST-*VEND* TRANSACTION DATA.

Step 70 can be optional when a PRE-*VEND* TRANSACTION can both satisfy the
requirements of step 40, "authorization" and step 70, "settling." Examples of when Step 70 may not be required, can include *vending* of a product or service when at the time of creating the PRE-*VEND* TRANSACTION DATA (i.e. the "authorization") the exact amount of the total sale is known. Other examples of when step 70 may not be required can include creating PRE-*VEND* TRANSACTION DATA (i.e. the "authorization") where no bill for the product or service will be incurred by the user (customer) (i.e. products and/or services for a particular user are "free").

One example of a *vending* *machine* is shown in Figure 2, a personal computer system, known as a system 100. The arrangement on table 129 is comprised of a PC 102...

...3D show an exemplary embodiment for the present invention, an unattended business center in which product and services can be vended. The control of a *vending* *machine* can include monitoring and accounting for products and services rendered from the *vending* *machine*. *Vending* machines can include copiers such as copiers 602A-602F, phone data-port combinations such as phone 648, facsimile machines such as fax 604A-604B, and printers such as printer 104 and printer 69A-612G. Other types of *vending* machines can include, laptop/palm computer print stations such as laptop print station 646, microfiche devices (not shown), projection equipment (not shown), scanners (not shown...

...shown).

Additionally, peripherals such as personal computers (PC) 102/630, personal computer terminal (NET PC) 630, and network computer (NC) 630, as well as traditional *vending* machines can be referred to generally as *vending* machines.

A personal computer (PQ-PC terminal (NET PC)-network computer (NC) 630 can be a PC 102 and can be a PC-NET PC...

...to as a public PC. For purposes of disclosure this form of PC will be referred to as a PC 630.

Vended products from a *vending* *machine* can include usage time, device ...and other related supplies (e.g. food, beverage, staplers, film, rubber bands, paper clips, note pads, computer disks, pens, and pencils). Vended services from a *vending* *machine* can include charging for usage time of a PCNET PC-NC 630, charging for usage time of online services, access to program applications, or databases...

...public access electronic commerce terminal is a computing device, such as a system 500. A public access electronic commerce terminal can effectuate control of a *vending* *machine* as required while allowing a user of the system to view, *vend*, respond to, or purchase from displayed interactive advertising. Furthermore, a user can make general inquires and obtain other information related to the interactive advertising from...

...electronic terminal. A system 500 can also be a transaction control device, such as a transaction control device 108.

1 0 The ability to view, *vend*, obtain information, respond to, or purchase from displayed interactive or electronic advertising by way of an electronic computing device is generally referred to as an...

...or as electronic commerce. A system 500 can also be an electronic computing device.

A typical business center can be comprised of a plurality of *vending* equipment. A 1 5 business center can include a copier 602A, a fax machine 604A, a laptop/palmtop print station 646, a data-port/phone...

...centers and retail outlets (store or location) require a plurality of copiers 602, a plurality of faxes 604, a plurality of PCs 630, and other *vending* equipment to meet the needs of their customers.

A control system, and operational method which can interface and control a plurality of different types of *vending* equipment is also required. It is also desirable that each *vending* *machine* is networked to share resources and reduce undue duplication, and expense of equipment. For example, when printing a customer receipt is required, a single printer on the network can allow a plurality of *vending* machines to share the single printer. Furthermore, networking *vending* machines in a business center, or a retail outlet facility enables shared transaction processing capabilities and allows system integration with existing POS, PMS/MIS, and...communicate with a server 632 and/or a POS system 614 and/or PMS/MIS system 620 and/or a PC 630. In addition, a *handheld* device can data communicate by way of infrared communications means 502 with any *vending* equipment attached to a first local area network (LAN) 622 and/or a second local area network (LAN) 626 by way of a LAN connection ...

...1 YPHL (amber LED) LED's.

Interconnected with microcontroller 532 is an equipment control means 506. The equipment control means 506 enables and disables the *vending* equipment for use responsive to customer identification "authorization" by way of a smart card, debit card, credit card, or other input identification means. An equipment...

...relay, such as an OMRON relay #G2V DC5, and/or at least one opto-isolator, such as QUALITY TECH #MID400QT.

In an exemplary embodiment, a *vending* *machine* such as a printer 104, PC 630, a projector (not shown), fax machine 604A or copier 602A can be controlled by way of equipment control...

...part of the equipment control means 506), such as relay, or a transistor, or other control circuit operationally responsive to microcontroller 532.

Control of a *vending* *machine* can be facilitated by way of a switching device in a first state activating a circuit or setting a first state within the *vending* *machine* allowing the *vending* *machine* to function normally. Furthermore, the *vending* *machine* can be deactivated for use, by way of a switching device, in a second state, breaking a circuit or setting a second state within the *vending* *machine*, disabling the *vending* *machine*'s functionality.

1 5 Interconnected with microcontroller 532 is a *vend* counter/timer means 508. The *vend* counter/timer means 508 independently counts and/or times events that occur external to system 500. Microcontroller 532 by way of the *vend* counter/timer means 508 can program functionally of the *vend* counter/timer means 508. Furthermore, *vend* counter/timer means 508 can monitor the status of a *vend* cycles, counts of *vending* events, and frequency of cycles wherein a rate, or rate change over a time period if required. Additionally, counter/timer means 508 can monitor time intervals, where *vending* price may depend on the length of time, a function, feature or *vending* *machine* is in use by a customer. A *vend* counter/time means 508 can be implemented with a ZILOG #Z80-CTC, and or a QUALITY TECH #MID400QT opto-isolator.

Interconnected with microcontroller 532 is...SILICON SYSTEMS 75T202-IP DTMF decoder, whereby microcontroller 532 by way of telephone interface control means 514, detects the telephone number being dialed by a *vending* *machine*, such as a fax, PC 630, data-port phone 648, or smart card re-value station 638.

Interconnected with microcontroller 532 is an electrically erasable...

...An alarm means 524 can be implemented using a PANASONIC piezoelectric ceramic buzzer #EFB-RL37C22. In an exemplary embodiment, a single enclosure fastened to a *vending* *machine* can contain a system 500, a hardware security interface means 522 (including motion and/or tilt sensors), and an alarm means 524. Motion of the *vending* *machine* imparts motion of fastened system 500 causing a tilting "alarm condition." Alternatively, an enclosure not fastened to a *vending* *machine* containing a system 500, hardware security interface means 522, and alarm means 524 can have I 0 motion and/or tilt sensors fastened to a *vending* *machine* external to the system 500 enclosure interconnected as required for desirable operability.

Interconnected with microcontroller 532 are relay switches 526. Relay switches 526 can be...

...a solenoid. In an exemplary embodiment, the solenoid control means 528 is responsive to a system 500 detecting an "out-of-supply" condition of a *vending* *machine* and opening a supply door/drawer to allow a customer to restock the *vending* machines. Supplies can include paper, ink and toner for a copier, printer, fax, or PC. In another exemplary embodiment, the solenoid control means 528 can...

...as other data processing equipment) can by way of PCMCIA interface 542 access network 600. Access to the network can selectively include other systems 500, *vending* machines, servers, VSAT communications, or any other device or communication means connected to the network 600.

Furthermore, other data processing equipment by way of 1...

...system 614, PMS/MIS system 620, or PC 630. Other data processing equipment can data communicate by way of the PCMCIA interface 542 with any *vending* *machine* or other device attached to the first LAN network 622 or the second LAN network 626 by way of a system 500 interconnected with said *vending* *machine*.

As an example, a service technician desiring to record network system readings or program functionality of a system 500 controller or network server (referred to...

...Buoy or other networking scheme as is known to one skilled in the art. In an exemplary embodiment the LAN network connection means 556 allows *vending* equipment to be located in permanent or temporary "stationary locations," "in-room locations" and on "*mobile* carts." A *mobile* cart PC 630, copier 602A or fax 604A can be located pool side, - 16 in a recreation area, or in a hotel room and remain...50944NCU-FW- I and an EPSON SED1354FOA LCD controller.

In an exemplary embodiment, a plurality of systems 500 can be connected to a plurality of *vending* machines. Furthermore, a plurality of systems 500 can be networked together with a PC 630, a server 632, a PMS/MIS 620, or a POS...

...of systems 500 networked together with a PC 630, a server 632, a PMS/MIS system 620, and a POS system 614.

Any number of *vending* machines and *vending* *machine* types can be controlled by way of a plurality of systems 500. Any number of servers, POS systems, PMS/MIS systems, and remote locations can...card, cash, coin, or other currency means and obtain a debit card, smart card or other ID form. Access to products and services from the *vending* machines controlled by way of network 600 can then be obtained with the valid form of ID. A customer can also present a credit card...

...embodiment, a printer 69A can be a general-purpose printer for use by a customer, and/or any system 500 device on network 600. Any *vending* *machine* or universal server on the first LAN 622 or the second local area network (LAN) 626 can also access and data communicate with the printer...

...embodiment, a printer 69B can be a general-purpose printer for use by a customer, and/or any system 500 on network 600.

Furthermore, any *vending* *machine* or universal server on the first LAN 622, or the second LAN 626 can utilize printer 6913. Applications for the printer 69B can include general...

...quantities of printer 69A, or 69B can be interconnected with the network 600 to best serve customer convenience.

Interconnected with a pre-paid telephone card *vending* (re-value and/or dispense) machine 624 can be a system 500J. A system 500J can be a system 500. A ftirther interconnection exists between the system 500J and the first LAN 622. In an exemplary embodiment, the pre-paid telephone card *vending* *machine* 624 can effectuate the dispensing and re-valuing of pre-paid - 21 telephone cards. In addition to the pre-paid telephone card's intended use of operating a telephone, the pre-paid telephone card can also be utilized as an ID form to access, by way of a system 500, *vending* equipment interconnected with a system 500 and network 600.

Interconnected with *vending* *machine* 640 that dispenses goods, services, food, or beverage can be a system 500K. A system 500K can be a system 500. A further interconnection exists between the system 500K and the first LAN 622. In an exemplary embodiment, the food and beverage *vending* *machine* 640 can effectuate the dispensing of goods and services, food and beverage products.

Interconnected with an information/Internet kiosk 628 is the second LAN 626...

...control of the network 600. The PMS/MIS system 620 can manage data processing needs of the network 600, can store and allow modification of *vending* *machine* settings, and implement gathering and maintain marketing, customer survey and other informational databases.

Furthermore, PMS/MIS system 620 can support transaction processing, and/or implement...

...the world by way of two or more network 600 having in common shared data communication resources with a remote location 618.

Interconnected with a *point* of sale (POS) system 614 can be a system 5001. A system 5001 can be a system 500. A further interconnection exists between the system...

...current in-store programming and functionally. The POS system 614 can manage data processing needs of the network 600, can store and allow modifications of *vending* *machine* settings, and can implement gathering and I 0 maintain marketing, customer survey and other informational databases. Further, POS system 614 can support transaction processing, and...

...all current in-store programming and functionally.

The server 632 can manage data processing needs of the network 600, can store and allow modifications of *vending* *machine* settings, and can implement gathering and maintain marketing, customer survey and other informational databases. Also, server 632 can support transaction processing, and/or implement the...be an acceptable forms of ID. There is shown in Figure 6A-6B, a floor plan illustrating how a network 600 with a plurality of *vending* machines and a plurality of systems 500, could be implemented in a retail location or in a hotel. Referring to Figure 6A, a representative floor...

...with copier 602B 1 5 and Fax 604B shown behind the front desk. In an exemplary embodiment, hotel operations copier, faxes, PC's and other *vending* machines can be connected to a network 600 and all business equipment (public use and private use) can be monitored, controlled and audited.

There is...or POS system can process the transaction data and - 26 determine the validity of the transaction to continue "approved" use or "denied" use of the *vending* equipment. Any suitable method of transaction verification can be employed including local or remote databases, credit bureaus, corporate accounts, in-store accounts, or very important...

...as a universal server can process the transaction data and determine the validity of the transaction to continue "approved" use or "denied" use of the *vending* equipment. Any suitable method of transaction verification can be employed including local or remote databases, credit bureaus, corporate accounts, in-store accounts, or very important...

...a third transaction process, a PC 630 can be used to determine validity of the transaction to continue "approved" use or "denied" use of the *vending* equipment. Any suitable method of transaction verification can be employed including local or remote databases, credit bureaus, corporate accounts, in-store accounts, or very important...

...transaction process is determined, processing moves to decision block 708. In decision block 708, a test is performed to determine if the use of the *vending* equipment has been authorized. If the resultant is in the affirmative, that is the resultant of the transaction processing is "approved," then processing moves to...

...declined." Processing control is then returned to the calling routine.

Processing in block 712 informs the user the transaction processing was "approved" and enables the *vending* for use. During use, relevant marketing data, and advertisements can be displayed on the system 500 interconnected with the *vending* *machine*. Relevant marketing data can include current date and time, location, total sale amount, and where appropriate total copies, faxed pages, time used, PC usage, online...
...change.

Processing then moves to block 716 of Figure 9B.

- 27 Processing in block 716 allows advertising to be displayed on each system 500 or *vending* *machine* capable of displaying advertising. Advertisements can be distributed and displayed at any time during the *vend* cycle.

In an exemplary embodiment, a universal server distributes advertising content over a network 600. When an advertisement is routed to a system 500 or *vending* *machine* currently in use, the system 500 or *vending* *machine* in use, determines if an advertisement can be displayed.

If an advertisement can be displayed at the current time then the advertisement is displayed. The routing criterion attached to the advertisement determines which systems 500 or *vending* machines will accept and display the advertisement.

For example, if a tennis shoe advertisement is globally distributed and routed to all systems 500 then each system 500 or *vending* *machine* that can, will accept and display the advertisement. Alternatively, an advertisement can be target marketed to a selected group of systems 500 and *vending* machines. For example, it is desirable to distribute and display "run" an advertisement for a multifunction fax machine. The fax machine is target marketed to...

...5 small office-home office ("SOHO") market. By distributing the advertisement globally with attached routing criterion to only "run" the advertisement on systems 500 and *vending* machines in retail stores that specialize in SOHO related business services then the advertisement will only be "run" in that market on those systems 500 and *vending* machines. Routing criterion can be utilized to distribute and manage advertising content by way of any universal server, over any network 600, to any system 500 or *vending* *machine* capable of displaying such advertisements.

Processing then moves to block 718.

Processing in block 718 allows a user to purchase by electronic commerce, transaction items advertised and displayed on any system 500 or *vending* *machine* capable of displaying the advertisements. The electronic commerce transaction can be processed as previously disclosed in processing block 706. Processing then moves to decision block...
...of previous transaction data, processing moves to block 706. If a user decides to terminate the transaction or the universal server or system 500 or *vending* *machine* decides to terminate the transaction, processing moves to block 726.

Processing in block 726 terminates a transaction by disabling the appropriate *vending* machines and printing a transaction receipt. Printing of a receipt can be optional or at the user's request. Processing then moves to block 728...

...500 can independently request a response from a universal server. Networks may vary from location to location with respect to the type and quantity of *vending* equipment, and systems 500 networked. Furthermore, remedies to problems such as "out of supplies," and appropriate responses

to "alarm conditions" can vary in accordance with...

...a plurality of systems 500 begins processing in block 802. The universal server is interconnected with a plurality of systems 500 and a plurality of *vending* machines by way of a first LAN 622 and/or a second LAN 626. In block 802 the universal server, PMS/MIS 620 or POS system 614, or PC 630 determines if a service condition has been requested by a system 500 or a *vending* *machine* connected to the network 600. Such service conditions can include out of supply, determination of a lengthy period of time without usage, inability to successfully...entered into a service database controlled by the universal server.

For example, when a system 500 detects that a transaction has concluded on a particular *vending* *machine* controlled by said system 500, a transaction complete service record can be sent to server 632. Server 632 in accordance with programming from a network...

...subset of all systems 500 or all systems 500 on a network 600.

1 5 A broadcast service message can include changing system 500 or *vending* *machine* operating parameters (such as pricing). A universal server can place a system 500 or *vending* *machine* in or out of service or choose to print on a network 600 printer. The systems 500 can respond to a service broadcast with an...

...Figure 1 1, a transaction routing routine 900. Processing begins in decision block 902, wherein transaction data is evaluated to determine if it is PRE-*VEND* or POST-*VEND* transaction data. If the resultant is that the transaction data is PRE-*VEND* transaction data, that is the customer has not yet used the *vending* equipment for a product or service, processing moves to block 904. If the resultant is that the transaction data is POSTVEND transaction data, that is, the customer has previously been authorized to use the *vending* equipment and has now concluded the *vending* transaction, processing moves to block 914.

In block 904, any acceptable form of identification (ID) presented by a customer or other person in any system...have a hotel PMS/MIS system substitute or append a room number as a second ID form. When the user has completed use of the *vending* *machine*, a bill can then be posted to a hotel room record within the hotel's PMS/MIS system.

In another exemplary embodiment, a customer can...

...as presented and grant access to an unattended 24-hour access area. The same form of ID can then be presented in a variety of *vending* machines. Upon the presentation of the first form of ID in these *vending* machines the DII processing can substitute or append a second form of ID, an in-store account number. As the customer uses a plurality of *vending* machines for goods and services transaction billing can be posted to the in-store customer's account.

In another exemplary embodiment, a customer can present a first form of ID requesting to use a *vending* *machine*. Through DII processing it may be determined that the customer qualifies for special pricing, or has earned a promotional reward. The DII process step could...

...occurring, a service request can be initiated by calling service routine 800. With instructions from the DII settings, including pricing in the system 500 or *vending* *machine* the customer is being authorized to use, can be reprogrammed. Upon authorization approval, the *vending* *machine* and its performance will be custom programmed for this customer's use.

In another exemplary embodiment, a user presents a first form of ID and ...

...to a DII resident on or accessible by a universal server, resident in or

accessible by a system 500, resident on or accessible by a *vending* *machine*, or resident in a database accessible by a universal server, system 500, or *vending* *machine*. If the transaction requires a DII processing step, the step can be performed transparent to the users or with the user's input. Furthermore, the...by way of VISA/MASTERCARD Secure Electronic Transaction ("SET") protocol standard. Furthermore, SET transaction processing can be implemented by way of a system 500, a *vending* *machine*, or a universal server. The SET protocol standard for secured transaction processing can be implemented with other data processing equipment accessible by a system 500, *vending* *machine* or the universal server.

Processing in block 910 can effectuate the following exemplary embodiment. A customer can enter or check into at hotel or retail...

...entered into the hotel's or retailer's PMS/MIS or POS system.

The customer can then present the second ID form to facilitate a *vending* transaction in any system 500. Transaction information by way of the network 600 can data communicate to the universal server transaction information to obtain first...

...paying cash, charging a smart card or credit card, charging an account, or recording the charges in a database.

Processing in block 912 routes PRE-*VEND* transactions for validation. Transaction validation can occur in a plurality of ways dependent on server programming, hotel/retail outlet preference, as well as based on ...

...the transaction processing is data communicated to the requesting system 500. If the resultant is in the affirmative, the customer is "approved" to use the *vending* equipment, then the requesting system 500 activates the *vending* equipment for use by the customer. If the resultant is in the negative, that is the customer has been "declined" for *vending* *machine* usage, then the requesting system 500 denies usage of the appropriate *vending* *machine*.

The customer is notified of the "declined" status by way of LED indicator means 504, voice record and playback means 570, first display means 582, or other indicators means. Processing then moves back to the calling routine.

Processing in block 914 routes POST-*VEND* transaction data. POST-*VEND* transaction data includes PRE-*VEND* identification data, in addition to the marketing data generated resultant from the *vend* process.

Examples of PRE-*VEND* transaction data can include identification, date, time, appended ID data, sale limits, system pricing, merchant identification, routing codes, and system 500 ID codes. Additional PRE-*VEND* transaction data can include network traffic codes, authorizing - 35 sale amounts, system 500 configuration parameters, database access codes, remote location codes, currency codes, terminal codes...

...include electronic commerce purchases, smart card re-valued totals, laptop usage, data port usage, and/or other marketing/transaction measurement/indicator data.

Routing of post-*vend* transaction processing by way of the DII is resultant from the updating of processing databases, accounting databases, and marketing databases in which the DII controls, manages, and/or has access to as shown in block 908. Further, post-*vend* transaction processing by way of the DII is resultant from post processing of credit cards, smart card and other types of transactions that require an intervening process to effectuate an electronic transfer of funds.

PRE-*VEND* and POST-*VEND* transactions can be processed by way of the PC 630 simultaneously and transparently to a user of the same PC 630. This functionality allows the PC 630 to be a *vending* *machine* interconnected with a system 500, a universal server such as server 632, PMS/MIS system 620 or a POS system 614. Furthermore, the PC 630...

...connection, or other network interface.

There is shown in Figure 12, a system self-configuring routine 1000. In an exemplary embodiment, each system 500 or *vending* *machine* can be preprogrammed with a network address ID or can have a network address ID automatically assigned. In certain network configurations a preprogrammed network address...

...a unique polling beacon address. Processing then moves to block 1008.

Processing in block 1008 waits for data communication responses from systems 500 and/or *vending* machines on network 600. If a system 500 or *vending* *machine* on network 600 1 0 has been preprogrammed with a network address, then said system 500 or *vending* *machine* data communicates a response to the polling beacon. If, however, a system 500 or *vending* *machine* on network 600 has not been preprogrammed, then a system 500 or *vending* *machine* desiring a network address can data communicate a response to the polling beacon. A universal server then creates (if not already created) a network configuration database. Data communication can then 1 5 be conducted on network 600 with any system 500 or *vending* *machine*. Network addresses can take the form of Internet IP type addressing.
Processing in the system self-configuring routine continues until each system 500 and *vending* *machine* has been assigned a valid network address. Processing then returns to the calling routine.

There is shown in Figure 13, a re-value smart card...universal server.

Alternatively, a help desk can initiate a request for "HELP" or "SERVICE" broadcasting such a request to one or more systems 500 or *vending* machines. The help desk can intervene, initiating a "HELP" or "SERVICE" request to effect changes/upgrades/repairs to any *vending* *machine*, any system 500, any universal server, or any other equipment residing on the network 600.

Furthermore, a help desk can intervene, initiating a "HELP" or "SERVICE" request to page a customer in a hotel, retail outlet, or other location in proximity to a system 500 or *vending* *machine*. Processing then moves to block 1204.

In block 1204, a data communication between the universal server and the system 500 requesting "HELP" or "SERVICE" occurs...

...or "SERVICE" and the "HELP or "SERVICE" source.
The term "HELP" or "SERVICE" can include a response to interactive advertising, electronic commerce activities or processes, *vending* *machine* usage requests, emergency needs, and other general purpose question and answer requests. The term "LIVE" can include viewing, talking, and exchanging data with another person...

...600 to provide data communication for "HELP" or "SERVICE" requirements. In addition, any system 500 residing on the network 600 can, by way of the *vending* *machine* interconnected with said system 500, such as a PC 630, data communicate with a remote location to obtain "HELP or "SERVICE" data. Then, by way...

...originally requesting "HELP" or "SERVICE". The original system 500 requesting "HELP" or "SERVICE" can be the same system 500 in which an interconnection with a *vending* *machine*, such as a PC 630 is relied upon to obtain "HELP" or "SERVICE" from a remote location.

Such a remote help desk can reside on...

...the prescribed service, change, or adjustment can be made over network 600. Whether the change is to a system 500, the universal server, or any *vending* *machine* (for example a PC 630) interconnected with a system 500 changes can be made by way of network 600. Such service, changes, adjustments, upgrades, and...LIVE" video feed to obtain instruction and have "HELP" and/or "SERVICE" questions answered. As necessary, the operator of the help desk can access the *vending* *machine* (in particular the PC 630) and aid the users in resolving operational, procedural, or other service related problems. Processing then moves to block 1210.

Processing...

...content can be audio only or visual only or a combination of both audio 1 5 and visual. In the present invention, a "banner" type, "*point* cast" type, or "multi cast" type advertisement can be displayed on a system 500. In an exemplary embodiment, when a customer desires additional information, audio...

...Additionally, audio can come in the form of a system 500 generated telephone call to the "banner" advertising source (business that placed the advertisement).

"Banner," "*point* cast," "multi cast" type advertisements are generally graphical advertisements commonly found on Internet web pages. In addition, full snap shot icon type advertisements, as well...

...advertising as well as each of the other types of advertising disclosed in the present invention. Advertising content displayed on either a system 500 or *vending* *machine*, such as PC 630 can be monitored, controlled, distributed, and shown by way of network 600 and a universal server.

In addition to the DII...

...such as printer 69A or printer 69B. In an exemplary embodiment, print data can be advertisement print data, transaction summary print data, receipt print data, *vending* *machine* print data, such as from a PC 630, or other print data.

If a system 500 is preprogrammed with a network 600 network location ID ...back to block 1404, wherein the universal server can intervene to best complete the print data request.

There is shown in Figure 17, a POST-*VEND* transaction processing routine 1500.
Processing begins in block 1502, wherein a POST-*VEND* transaction is data communicated to the universal server. Processing then moves to block 1504.

In block 1504, the universal server, by way of DII processing (as required) routes the POST-*VEND* transaction for payment, posting, or billing. The process of payment, posting or billing is generally referred to as "settling" or a "settlement" transaction. Transactions can...

...smart card, pre-paid card, hotel key/card, or biometric) to different remote locations, or to different on-site or off-site databases. Furthermore, post-*vend* transactions can be routed based upon preprogrammed criteria. For example, all credit card transactions requiring "settlement" can be routed to a first credit bureau until...

...requiring "settlement" can then be routed to a second credit bureau. Processing then moves to block 1506.

In block 1506, non-credit card and POST-*VEND* transactions not requiring any additional third party port processing (i.e. by way of a credit

bureau) are "settled" by posting the POSTVEND transaction data...

...DII processing (as required) to the appropriate remote location, or on-site or off-site database. The universal server can be preprogrammed to store POST-*VEND* transaction and "batch" post transaction data based on a preprogrammed criteria.

Such "batch" posting preprogrammed criteria can be based in part on date, time, or...

...process of posting any number of transactions at once in a formatted block of data. Processing then moves to block 1508.

In block 1508, POST-*VEND* transactions reliant on a third party processor (i.e. credit cards) are processed in accordance with preprogramming of the universal server.

Preprogramming of the universal...

...procedures disclosed in block 1504, and 1506. Processing then moves to block 1510.

In block 15 1 0, the universal server determines whether the POST-*VEND* transaction processing was successful. If the POST-*VEND* transaction processing was not successful, that is, the universal server was unable to post process the POST-*VEND* transaction, then the universal server can data communicate the "unsettled" post *vend* transaction to a remote locate. Such a remote location can be a computer center that monitors the functionality of a plurality of universal servers. The...

...a test is performed. A test is performed to determine if a preprograrnmed number of hours have elapsed. Each hour a system 500 or a *vending* *machine* interconnected with a system 500 is not operated successfully (a complete *vend* cycle) by ...and programmed to respond.

Processing then moves to block 1604.

Processing in block 1604, detects if a malfunction has occurred with a system 500, a *vending* *machine* interconnected with a system 500, or a printer, such as printer 69A or 69B.

- 44 Other *vending* machines and data processing equipment on network 600 can also be tested for malfunctions. Malfunction error messages that are detected by a system 500 can...

...network 600. The polling is equivalent to requesting each system 500 to perform a self-test, and to perform a test to determine if the *vending* *machine* interconnect with said system 500 is operating correctly. Processing then moves to block 1608.

In block 1608, processing of a detected error condition occurs. The...

Claim

I I . A public access electronic commerce terminal for simultaneously controlling a plurality of *vending* machines and conducting electronic commerce transactions comprising: a transaction control device interconnected with at least one of said plurality of *vending* machines for controlling said interconnected *vending* *machine*; an input device interconnected with said transaction control device for inputting user data; a display device interconnected with said transaction control device for displaying information...

...public access electronic commerce terminal in accordance with claim 1, wherein said display means displays interactive advertising and information related to the processing of a *vending* transaction and or an electronic commerce transaction.

4 A public access electronic commerce terminal in accordance with claim 1, wherein said transaction control device is...

...status conditions.

20 A public access electronic commerce terminal in accordance with claim 1, further comprising an equipment control means for controlling usage of said *vending* *machine*.

21 A public access electronic commerce terminal in accordance with claim 1, further comprising a *vend* counter control means, for monitoring, counting, and controlling cycle event
of said *vending* *machine*.

22 A public access electronic commerce terminal in accordance with claim 1, further comprising a mouse/keyboard control means, for controlling usage of a personal...

...a universal server.

31 A public access electronic commerce terminal in accordance with claim 27, wherein said local area network means can interface to a *point* of sale system.

32 A public access electronic commerce terminal in accordance with claim 1, wherein said interactive user response system is further comprised of ...

...is further comprised of a camera interconnected with said transaction control device, to communicate video for video conferencing.

34 A transaction processing method for processing *vending* and electronic commerce transactions by way of a public access electronic commerce terminal system comprising the steps
of:
a) capturing transaction data;
b) identifying transaction...is
an interface to a universal server.

48 A network system in accordance with claim 44, wherein said networking means is
an interface to a *point* of sale system.

49 A dynamic identification interchange method for exchanging one form of identification for another form of identification through the use of a...

...error condition;
C) allowing a remote location to poll a universal server to data communicate with a plurality of public access electronic commerce terminals and *vending* equipment requesting
system status information;
d) determining if an error condition is present based on said system status
information; and
e) allowing said universal server...data communication was successful; and
f) sending print data to said universal server when data communication was not successful.

55 A method of processing post *vend* transaction data by way of a public access
electronic commerce terminal system comprising the steps of:
a) data communicating said post *vend* transaction data to a universal server;
b) determining whether post *vend* transaction routing is required;
C) routing said post *vend* transaction data for settlement when required;
d) routing said post *vend* transaction data for posting when required;
e) processing said post *vend* transaction data in accordance with said

universal
server's programmed settings; and
f) determining if said post *vend* transaction data processing was successful.

56 A method of servicing a request from a universal server, a property *management* system, a *point* of sale system, a management information system, a personal computer, and or a user by way of a public access electronic commerce terminal system comprising...

...transaction in accordance with claim 57, whereby said transaction data is processed by a universal server, and or a property management system, and or a *point* of sale system, and or a management information system , and or a personal computer.

59 A public access electronic commerce terminal for simultaneously controlling a plurality of *point* of sale systems and conducting electronic commerce transactions comprising: a transaction control means interconnected with at least one of said plurality of *point* of sale systems for controlling said interconnected *point* of sale system; an input means interconnected with said transaction control device for inputting user data; a display means interconnected with said transaction control device...

?t s23/3,k/6

23/3,K/6 (Item 4 from file: 349)

DIALOG(R)File 349:PCT FULLTEXT
(c) 2004 WIPO/Univentio. All rts. reserv.

00541103 **Image available**

A PHONE HAVING ACCESS TO THE INTERNET FOR THE PURPOSES OF TRANSACTING E-MAIL, E-COMMERCE, AND E-BUSINESS, AND FOR COMMUNICATING VOICE AND DATA

TELEPHONE AVEC ACCES A INTERNET DESTINE A DES TRANSACTIONS PAR COURRIER ELECTRONIQUE, COMMERCE ELECTRONIQUE ET AFFAIRES ELECTRONIQUES ET A LA COMMUNICATION DE SONS VOCAUX ET DE DONNEES

Patent Applicant/Assignee:
USA TECHNOLOGIES INC,
Inventor(s):
KOLLS H Brock,
Patent and Priority Information (Country, Number, Date):
Patent: WO 200004476 A1 20000127 (WO 0004476)
Application: WO 99US15937 19990714 (PCT/WO US9915937)
Priority Application: US 9893475 19980720; US 99293358 19990416; US 99293129 19990416; US 99335327 19990617
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AE AL AM AT AU AZ BA BB BG BR BY CA CH CN CU CZ DE DK EE ES FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SL TJ TM TR TT UA UG UZ VN YU ZA ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 23113

Fulltext Availability:
Detailed Description
Claims

English Abstract
...invention relates to a universal advertising and payment system and method for networking, monitoring and effectuating e-mail, e-commerce, and e-business and controlling *vending* equipment and applications. The system can effectuate electronic commerce and interactive advertising at the *point* of sale in this instance at a public, private or cellular

phone. *Vending* equipment includes copiers, phones (public, private, cellular), facsimile machines, printers, data-ports, laptop print stations, notebook computers, palmtop computers (PALM PILOT), microfiche devices, projectors, scanners, cameras, modems, communication access, personal data assistants (*PDA*'s), pagers, and other *vending* machines, personal computers (PC), PC terminals (NET PC), and network computers (NC). *Vending* equipment can be networked to each other through a first network, programmable and accessible by a PC, server, *point* of sale (POS) system, property or management information system (PMS/MIS), and networked to a second network. The first network and second network can be the same network. Complete control of a *vending* *machine*'s functionality including usage, control, diagnostics, inventory, and marketing data capture can be effectuated locally or by remote connection to the network. Remote connection to...

...and other wire and wireless transmission. The present invention allows a user to obtain authorization for use, pay for products and services, and configure the *vending* equipment with a smart card, or magnetic card (card). Magnetic cards include phone, smart card, credit card, debit card, pre-paid, automated teller machine (ATM...

French Abstract

...electronique et de commande de materiel et d'applications de vente. Le systeme permet de faire du commerce electronique et de la publicite interactive au *point* de vente, dans ce cas, dans un telephone public, prive ou cellulaire. Le materiel de vente comprend des copieurs, des telephones (publics, prives, cellulaires), des...

...de poche (PALM PILOT), des appareils a microfiches, des projecteurs, des scanners, des cameras, des modems, des dispositifs d'acces aux communications, des assistants numeriques (*PDA*), des recepteurs d'appel de personnes et d'autres appareils de vente, des ordinateurs personnels (PC), des terminaux de PC (NET PC) et des ordinateurs...

...par reseau le materiel de vente dans un premier reseau, programmable et accessible a partir d'un PC, d'un serveur, d'un systeme de *point* de vente (POS), d'un systeme d'information de propriete ou de gestion (PMS/MIS), puis le mettre en reseau dans un deuxieme reseau. Le...

Detailed Description

... advertising and payment system and method for networking, monitoring, collecting data, selling goods and services, controlling interactive advertising, controlling and effectuating electronic commerce and controlling *vending* equipment including private and public phones. The present invention also relates to physical and virtual networking of private and public phones and network hardware, server...

...network control, and network security. The present invention can be implemented in a manner to allow operational monitoring and control of networks (and network hardware), *vending* machines including private and public phones, electronic mail (e-mail), electronic commerce (e-commerce), electronic business (e-business), payment for goods and services, delivery of...among competing rival virtual companies as well as brick and mortar type physical companies. In addition, the inability of the virtual companies to generate physical *point* of presence in the public may make virtual companies susceptible to competition from physical companies that decide to diversify by developing a competing virtual business...

...control and payment system to distribute and display interactive advertising, conduct electronic mail, electronic commerce, electronic business, and control the billing for the use of *vending* equipment. *Vending* equipment can include copiers, phones (public, private, cellular), facsimile machines, printers, data-ports, laptop print stations, notebook computers, palmtop computers (PALM PILOT), microfiche devices, projectors, scanners, cameras, modems, communication access, personal data assistants (*PDA*'s), pagers, and other types of *vending*

machines, personal computers (PC), PC terminals (NET PC), and network computers (NC).

One aspect of the present invention provides a system for public access to...

...desk routine 1200 flowchart;
Figure 15 shows an advertising routine 1300 flowchart;
Figure 16 shows a printing routine 1400 flowchart;
Figure 17 shows a POST-*VEND* transaction processing routine 1500 flowchart; and
Figure 18 shows an error detection routine 1600 flowchart;
DETAILED DESCRIPTION OF THE INVENTION
Figure 1 shows an overview of the universal interactive advertising and payment system for *vending* of public access electronic commerce and business related products and services. The universal interactive advertising and payment system is a computer program which may reside in a carrier, such as a disk, diskette or a modulated carrier wave.

A *vending* *machine* is defined as any piece of equipment in which products and/or services can be rendered therefrom. Referring again to Figure 1, control of a *vending* *machine* (referred to as *VENDING* *MACHINE* USAGE) can involve a first step of denying usage, access, service, or products from the *vending* *machine* as shown in step 10. Next, in step 20 the system accepts user input (data and/or monetary, disclosed herein as PRE-*VEND* TRANSACTION DATA (i.e.

"AUTHORIZATION")), and then in step 30, the system authenticates or verifies the user's input to determine if *VENDING* *MACHINE* USAGE is "authorized." If, in step 40, *VENDING* *MACHINE* USAGE is "authorized" the processing proceeds to step 50. In step 50, the system effectuates the delivery, monitoring, and dispensing of the product, and/or service. Then, in step 60, the system processes the POST-*VEND* TRANSACTION DATA to effectuate user (customer) billing, and account maintenance. Lastly, in step 70, the system "settles" (effectuates the transfer of funds, i.e. payment) the POST-*VEND* TRANSACTION DATA.
Step 70 can be optional when a PRE-*VEND* TRANSACTION can both satisfy the
requirements of step 40, "authorization" and step 70, "settling. "
Examples of when Step 70 may not be required, can include *vending* of a product or service when at the time of creating the PREVEND TRANSACTION DATA (i.e. the "authorization") the exact amount of the total sale is known. Other examples of when step 70 may not be required can include creating PRE-*VEND* TRANSACTION DATA (i.e. the "authorization") where no bill for the product or service will be incurred by the user (customer) (i.e. products and/or services for a particular user are "free").

One example of a *vending* *machine* is shown in Figure 2, a personal computer system, known as a system 100. The arrangement on table 129 is comprised of a PC 102...

...3D show an exemplary embodiment for the present invention, an unattended business center in which product and services can be vended. The control of a *vending* *machine* can include monitoring and accounting for products and services rendered from the *vending* *machine*. *Vending* machines can include copiers such as copiers 602A-602F, phone/data-port combinations such as phone 648, facsimile machines such as fax 604A-604B, and printers such as printer 104 and printer 612A-612G. Other types of *vending* machines can include, laptop/palm computer print stations such as laptop print station 646, microfiche devices (not shown), projection equipment (not shown), scanners (not shown...

...shown).

Additionally, peripherals such as personal computers (PC) 102/630, personal computer terminal (NET PC) 630, and network computer (NC) 630, as well as traditional *vending* machines can be referred to generally as

vending machines.

A personal computer (PC)-PC terminal (NET PQ-network computer (NC) 630 can be a PC 102 and can be a PC-NET PC...to as a public PC. For purposes of disclosure this form of PC will be referred to as a PC 630.

Vended products from a *vending* *machine* can include usage time, device usage count, printed output, copies, printed pages, fax transmissions, and other related supplies (e.g. food, beverage, staplers, film, rubber bands, paper clips, note pads, computer disks, pens, and pencils).

Vended services from a *vending* *machine* can include charging for usage time of a PC-NET PCNC 630, charging for usage time of online services, access to program applications, or databases...

...public access electronic commerce terminal can be referred to as an electronic commerce terminal. A public access electronic commerce terminal can effectuate control of a *vending* *machine* as required while allowing a user of the system to view, *vend*, respond to, or purchase from displayed interactive advertising. Furthermore, a user can make general inquires and obtain other information related to the interactive advertising from...

...control device, such as a transaction control device 108. An E-PORT manufactured by USA TECHNOLOGIES can be a system 500.

The ability to view, *vend*, obtain information, respond to, or purchase from displayed interactive or electronic advertising by way of an electronic computing device is generally referred to as an...

...or as electronic commerce. A system 500 can also be an electronic computing device.

A typical business center can be comprised of a plurality of *vending* equipment. A business center can include a copier 602A, a fax machine 604A, a laptop/palmtop print station 646, a data-port/phone 648, and...

...centers and retail outlets (store or location) require a plurality of copiers 602, a plurality of faxes 604, a plurality of PCs 630, and other *vending* equipment to meet the needs of their customers. A control system, and operational method which can interface and control a plurality of different types of *vending* equipment is also required. It is also desirable that each *vending* *machine* is networked to share resources and reduce undue duplication, and expense of equipment. For example, when printing a customer receipt is required, a single printer on the network can allow a plurality of *vending* machines to share the single printer. Furthermore, networking *vending* machines in a business center, or a retail outlet facility enables shared transaction processing capabilities and allows system integration with existing POS, PMS/MIS, and...communicate with a server 632 and/or a POS system 614 and/or PMS/MIS system 620 and/or a PC 630. In addition, a *handheld* device can data communicate by way of infrared communications means 502 with any *vending* equipment attached to a first local area network (LAN) 622 and/or a second local area network (LAN) 626 by way of a LAN connection ...

...and LN41YPHL (amber LED) LED's.
Interconnected with microcontroller 532 is an equipment control means 506. The equipment control means 506 enables and disables the *vending* equipment for use responsive to customer identification "authorization" by way of a smart card, debit card, credit card, or other input identification means. An equipment...

...relay, such as an OMRON relay #G2V DC5, and/or at least one opto-isolator, such as QUALITY TECH #MID400QT.

In an exemplary embodiment, a *vending* *machine* such as a printer 104,

PC 630, a projector (not shown), fax machine 604A or copier 602A can be controlled by way of equipment control...

...part of the equipment control means 506), such as relay, or a transistor, or other control circuit operationally responsive to microcontroller 532.

Control of a *vending* *machine* can be facilitated by way of a switching device in a first state activating a circuit or setting a first state within the *vending* *machine* allowing the *vending* *machine* to function normally. Furthermore, the *vending* *machine* can be deactivated for use, by way of a switching device, in a second state, breaking a circuit or setting a second state within the *vending* *machine*, disabling the *vending* *machine*'s functionality.

Interconnected with microcontroller 532 is a *vend* counter/timer means 508. The *vend* counter/timer means 508 independently counts and/or times events that occur external to system 500. Microcontroller 532 by way of the *vend* counter/timer means 508 can program functionally of the *vend* counter/timer means 508. Furthermore, *vend* counter/timer means 508 can monitor the status of a *vend* cycle, counts of *vending* events, and frequency of cycles wherein a rate, or rate change over a time period if required. Additionally, counter/timer means 508 can monitor time intervals, where *vending* price may depend on the length of time, a function, feature or - 13 *vending* *machine* is in use by a customer. A *vend* counter/time means 508 can be implemented with a ZILOG #Z80-CTC, and or a QUALITY TECH #MID400QT opto-isolator.

Interconnected with microcontroller 532 is...

...SILICON SYSTEMS 75T202-IP DTMF decoder, whereby microcontroller 532 by way of telephone interface control means 514, detects the telephone number being dialed by a *vending* *machine*, such as a fax, PC 630, data-port/phone 648, or smart card re-value station 638. Interconnected with microcontroller 532 is an electrically erasable...

...broken. Further, hardware security interface means 522 includes a plurality of tilt sensors, wherein tilt or motion sensors can be placed on a plurality of *vending* equipment and peripherals. An alarm signal is resultant if the tilt sensors are activated (excessive tilting occurs). Furthermore, an "alarm condition" service request can be...

...destination location, remote or on the network. Alarm destination locations can include a front desk, security office, owner of the retail store, police or other *vending* device such as a server 632, a POS system 614, a PMS/MIS system 620 or a PC 630. A hardware security interface means can...

...An alarm means 524 can be implemented using a PANASONIC piezoelectric ceramic buzzer #EFB-RL37C22. In an exemplary embodiment, a single enclosure fastened to a *vending* *machine* can contain a system 500, a hardware security interface means 522 (including motion and/or tilt sensors), and an alarm means 524. Motion of the *vending* *machine* imparts motion of fastened system 500 causing a tilting "alarm condition. " Alternatively, an enclosure not fastened to a *vending* *machine* containing a system 500, hardware security interface means 522, and alarm means 524 can have motion and/or tilt sensors fastened to a *vending* *machine* external to the system 500 enclosure interconnected as required for desirable operability.

Interconnected with microcontroller 532 are relay switches 526. Relay switches 526 can be...solenoid. In an exemplary embodiment, the solenoid control means 528 is responsive - 15 to a system 500 detecting an "out-of-supply" condition of a *vending* *machine* and opening a sup-ply door/drawer to allow a customer to restock the *vending* machines. Supplies can include paper, ink and toner for a copier, printer, fax, or PC. In another exemplary embodiment, the solenoid control means 528 can

...

...as other data processing equipment) can by way of PCMCIA interface 542 access network 600.

Access to the network can selectively include other systems 500, *vending* machines, servers, VSAT communications, or any other device or communication means connected to the network - 16 600. Furthermore, other data processing equipment by way of...

...system 614, PMS/MIS system 620, or PC 630. Other data processing equipment can data communicate by way of the PCMCIA interface 542 with any *vending* *machine* or other device attached to the first LAN network 622 or the second LAN network 626 by way of a system 500 interconnected with said *vending* *machine*.

As an example, a service technician desiring to record network system readings or program ftinctionality of a system 500 controller or network server (referred to...Buoy or other networking scheme as is known to one skilled in the art.

In an exemplary embodiment the LAN network connection means 556 allows *vending* equipment to be located in permanent or temporary " stationary locations, " " in-room locations and on "*mobile* carts. " A *mobile* cart PC 630, copier 602A or fax 604A can be located pool side, in a recreation area, or in a hotel room and remain connected...50944NCU-FW- I and an EPSON SED1354FOA LCD controller.

In an exemplary embodiment, a plurality of systems 500 can be connected to a plurality of *vending* machines. Furthermore, a plurality of systems 500 can be networked together with a PC 630, a server 632, a PMS/MIS 620, or a POS...

...of systems 500 networked together with a PC 630, a server 632, a PMS/MIS system 620, and a POS system 614. Any number of *vending* machines and *vending* *machine* types can be controlled by way of a plurality of systems 500. Any number of servers, POS systems, PMS/MIS systems, and remote locations can...card, cash, coin, or other currency means and obtain a debit card, smart card or other ID form. Access to products and services from the *vending* machines controlled by way of network 600 can then be obtained with the valid form of ID. A customer can also present a credit card...

...embodiment, a printer 612A can be a general-purpose printer for use by a customer, and/or any system 500 device on network 600. Any *vending* *machine* or universal server on the first LAN 622 or the second local area network (LAN) 626 can also access and data communicate with the printer...

...embodiment, a printer 612B can be a general-purpose printer for use by a customer, and/or any system 500 on network 600.

Furthermore, any *vending* *machine* or universal server on the first LAN 622, or the second LAN 626 can utilize printer 612B. Applications for the printer 612B can include general...

...quantities of printer 612A, or 612B can be interconnected with the network 600 to best serve customer convenience.

Interconnected with a pre-paid telephone card *vending* (re-value and/or dispense) machine 624 can be a system 500J. A system 500J can be a system 500. A further interconnection exists between the system 500J and the first LAN 622. In an exemplary embodiment, the pre-paid telephone card *vending* *machine* 624 can effectuate the dispensing and re-valuing of pre-paid telephone cards. In addition to the pre-paid telephone card's intended use of operating a telephone, the pre-paid telephone card can also be utilized as an ID form to access, by way of a system 500, *vending* equipment interconnected with a system 500 and network 600.

Interconnected with *vending* *machine* 640 that dispenses goods, services, food, or beverage can be a system 500K. A system 500K can be a system 500. A further interconnection exists between the system 500K and the first LAN 622. In an exemplary embodiment, the food and beverage *vending* *machine* 640 can effectuate the dispensing of goods and services, food and beverage products.

- 23 Interconnected with an information/Internet kiosk 628 is the second LAN...

...control of the network 600. The PMS/MIS system 620 can manage data processing needs of the network 600, can store and allow modification of *vending* *machine* settings, and implement gathering and maintain marketing, customer survey and other informational databases.

Furthermore, PMS/MIS system 620 can support transaction processing, and/or implement...the world by way of two or more networks 600 having in common shared data communication resources with a remote location 618.

Interconnected with a *point* of sale (POS) system 614 can be a system 5001. A system 5001 can be a system 500. A further interconnection exists between the system...

...in-store programming and - 24 functionally. The POS system 614 can manage data processing needs of the network 600, can store and allow modifications of *vending* *machine* settings, and can implement gathering and maintain marketing, customer survey and other informational databases. Further, POS system 614 can support transaction processing, and/or implement...

...all current in-store programming and functionally.
The server 632 can manage data processing needs of the network 600, can store and allow modifications of *vending* *machine* settings, and can implement gathering and maintain marketing, customer survey and other informational databases. Also, server 632 can support transaction processing, and/or implement the...be an acceptable forms of ID.

There is shown in Figure 6A-613, a floor plan illustrating how a network 600 with a plurality of *vending* machines and a plurality of systems 500, could be implemented in a retail location or in a hotel. Referring to Figure 6A, a representative floor...

...is shown with copier 602B and Fax 604B shown behind the front desk. In an exemplary embodiment, hotel operations copier, faxes, PC's and other *vending* machines can be connected to a network 600 and all business equipment (public use and private use) can be monitored, controlled and audited.

There is POS system can process the transaction data and determine the validity of the transaction to continue "approved" use or "denied" use of the *vending* equipment.

Any suitable method of transaction verification can be employed including local or remote - 28 databases, credit bureaus, corporate accounts, in-store accounts, or very...

...as a universal server can process the transaction data and determine the validity of the transaction to continue "approved" use or "denied" use of the *vending* equipment. Any suitable method of transaction verification can be employed including local or remote databases, credit bureaus, corporate accounts, in-store accounts, or very important...

...a third transaction process, a PC 630 can be used to determine validity of the transaction to continue "approved" use or "denied" use of the *vending* equipment. Any suitable method of transaction verification can be employed including local or remote databases, credit bureaus, corporate accounts, in-store accounts, or very important...

...transaction process is determined, processing moves to decision block 708. In decision block 708, a test is performed to determine if the use of the *vending* equipment has been authorized. If the resultant is in the affirmative, that is the resultant of the transaction processing is "approved," then processing moves to...

...declined." Processing control is then returned to the calling routine. Processing in block 712 informs the user the transaction processing was "approved" and enables the *vending* for use. During use, relevant marketing data, and advertisements can be displayed on the system 500 interconnected with the *vending* *machine*. Relevant marketing data can include current date and time, location, total sale amount, and where appropriate total copies, faxed pages, time used, PC usage, online...

...change.

Processing then moves to block 716 of Figure 9B.

- 29 Processing in block 716 allows advertising to be displayed on each system 500 or *vending* *machine* capable of displaying advertising. Advertisements can be distributed and displayed at any time during the *vend* cycle.

In an exemplary embodiment, a universal server distributes advertising content over a network 600. When an advertisement is routed to a system 500 or *vending* *machine* currently in use, the system 500 or *vending* *machine* in use, determines if an advertisement can be displayed.

If an advertisement can be displayed at the current time then the advertisement is displayed. The routing criterion attached to the advertisement determines which systems 500 or *vending* machines will accept and display the advertisement.

For example, if a tennis shoe advertisement is globally distributed and routed to all systems 500 then each system 500 or *vending* *machine* that can, will accept and display the advertisement. Alternatively, an advertisement can be target marketed to a selected group of systems 500 and *vending* machines. For example, it is desirable to distribute and display "run" an advertisement for a multifunction fax machine. The fax machine is target marketed to the small office-home office ("SOHO") market. By distributing the advertisement globally with attached routing criterion to only "run" the advertisement on systems 500 and *vending* machines in retail stores that specialize in SOHO related business services then the advertisement will only be "run" in that market on those systems 500 and *vending* machines. Routing criterion can be utilized to distribute and manage advertising content by way of any universal server, over any network 600, to any system 500 or *vending* *machine* capable of displaying such advertisements. Processing then moves to block 718.

Processing in block 718 allows a user to purchase by electronic commerce, transaction items advertised and displayed on any system 500 or *vending* *machine* capable of displaying the advertisements. The electronic commerce transaction can be processed as previously disclosed in processing block 706. Processing then moves to decision block...

...of previous transaction data, processing moves to block 706. If a user decides to terminate the transaction or the universal server or system 500 or *vending* *machine* decides to terminate the transaction, processing moves to block 726.

Processing in block 726 terminates a transaction by disabling the appropriate *vending* machines and printing a transaction receipt. Printing of a receipt can be optional or ...500 can independently request a response from a universal server. Networks may vary from location to location with respect to the type and quantity of *vending* equipment, and systems 500 networked. Furthermore, remedies to problems

such as "out of supplies," and appropriate responses to "alarm conditions" can vary in accordance with...

...a plurality of systems 500 begins processing in block 802. The universal server is interconnected with a plurality of systems 500 and a plurality of *vending* machines by way of a first LAN 622 and/or a second LAN 626. In block 802 the universal server, PMS/MIS 620 or POS system 614, or PC 630 determines if a service condition has been requested by a system 500 or a *vending* *machine* connected to the network 600. Such service conditions can include out of supply, determination of a lengthy period of time without usage, inability to successfully...

...entered into a service database controlled by the universal server.

For example, when a system 500 detects that a transaction has concluded on a particular *vending* *machine* controlled by said system 500, a transaction complete service record can be sent to server 632. Server 632 in accordance with programming from a network all systems 500 or all systems 500 on a network 600.

A broadcast service message can include changing system 500 or *vending* *machine* operating parameters (such as pricing). A universal server can place a system 500 or *vending* *machine* in or out of service or choose to print on a network 600 printer. The systems 500 can respond to a service broadcast with an...

...Figure 1 1, a transaction routing routine 900. Processing begins in decision block 902, wherein transaction data is evaluated to determine if it is PRE-*VEND* or POST-*VEND* transaction data. If the resultant is that the transaction data is PRE-*VEND* transaction data, that is the customer has not yet used the *vending* equipment for a product or service, processing moves to block 904. If the resultant is that the transaction data is POSTVEND transaction data, that is, the customer has previously been authorized to use the *vending* equipment and has now concluded the *vending* transaction, processing moves to block 914.

In block 904, any acceptable form of identification (ID) presented by a customer or other person in any system...

...have a hotel PMS/MIS system substitute or append a room number as a second ID form. When the user has completed use of the *vending* *machine*, a bill can then be posted to a hotel room record within the hotel's PMS/MIS system.

In another exemplary embodiment, a customer can...

...as presented and grant access to an unattended 24-hour access area. The same form of ID can then be presented in a variety of *vending* machines. Upon the presentation of the first form of ID in these *vending* machines the DII processing can substitute or append a second form of ID, an in-store account number. As the customer uses a plurality of *vending* machines for goods and services transaction billing can be posted to the in-store customer's account.

In another exemplary embodiment, a customer can present a first form of ID requesting to use a *vending* *machine*. Through DII processing it may be determined that the customer qualifies for special pricing, or has earned a promotional reward. The DII process step could...

...a service request can be initiated by calling service routine 800. With instructions from
9
the DII settings, including pricing in the system 500 or *vending* *machine* the customer is being authorized to use, can be reprogrammed. Upon authorization approval, the *vending* *machine* and its performance will be custom programmed for this customer's use.

In another exemplary embodiment, a user presents a first form of ID and ...to a DII resident on or accessible by a universal server, resident in or accessible by a system 500, resident on or accessible by a *vending* *machine*, or resident in a database accessible by a universal server, system 500, or *vending* *machine*. If the transaction requires a DII processing step, the step can be performed transparent to the users or with the user's input. Furthermore, the...

...by way of VISA/MASTERCARD Secure Electronic Transaction ("SET") protocol standard.

Furthermore, SET transaction processing can be implemented by way of a system 500, a *vending* *machine*, or a universal server. The SET protocol standard for secured transaction processing can be implemented with other data processing equipment accessible by a system 500, *vending* *machine* or the universal server.

Processing in block 910 can effectuate the following exemplary embodiment. A customer can enter or check into at hotel or retail...

...entered into the hotel's or retailer's PMS/MIS or POS system.

The customer can then present the second ID form to facilitate a *vending* transaction in any system 500. Transaction information by way of the network 600 can data communicate to the universal server transaction information to obtain first...
...paying cash, charging a smart card or credit card, charging an account, or recording the charges in a database.

Processing in block 912 routes PRE-*VEND* transactions for validation. Transaction validation can occur in a plurality of ways dependent on server programming, hotel/retail outlet preference, as well as based on ...the transaction processing is data communicated to the requesting system 500. If the resultant is in the affirmative, the customer is "approved" to use the *vending* equipment, then the requesting system 500 activates the *vending* equipment for use by the customer. If the resultant is in the negative, that is the customer has been "declined" for *vending* *machine* usage, then the requesting system 500 denies usage of the appropriate *vending* *machine*.

The customer is notified of the "declined" status by way of LED indicator means 504, voice - 37 record and playback means 570, first display means 582, or other indicators means. Processing then moves back to the calling routine.

Processing in block 914 routes POST-*VEND* transaction data. POST-*VEND* transaction data includes PRE-*VEND* identification data, in addition to the marketing data generated resultant from the *vend* process. Examples of PRE-*VEND* transaction data can include identification, date, time, appended ID data, sale limits, system pricing, merchant identification, routing codes, and system 500 ID codes. Additional PRE-*VEND* transaction data can include network traffic codes, authorizing sale amounts, system 500 configuration parameters, database access codes, remote location codes, currency codes, terminal codes, and...

...including time, calls, etc.), smart card re-valued totals, laptop usage, data port usage, and/or other marketing/transaction measurement/indicator data.

Routing of post-*vend* transaction processing by way of the DII is resultant from the updating of processing databases, accounting databases, and marketing databases in which the DII controls, manages, and/or has access to as shown in block 908. Further, post-*vend* transaction processing by way of the DII is resultant from post processing of credit cards, smart card and other types of transactions that require an intervening process to effectuate an electronic transfer of ftinds.

PRE-*VEND* and POST-*VEND* transactions can be processed by way of the PC 630 simultaneously and transparently to a user of the same PC 630. This functionality allows the PC 630 to be a *vending* *machine* interconnected with a system 500, a universal server such as server 632, PMS/MIS system 620 or a POS system 614. Furthermore, the PC 630...

...connection, or other network interface.

There is shown in Figure 12, a system self-configuring routine 1000. In an exemplary embodiment, each system 500 or *vending* *machine* can be preprogrammed with a network address ID or can have a network address ID automatically assigned. In certain network configurations a preprogrammed network address...

...a unique polling beacon address. Processing then moves to block 1008.

Processing in block 1008 waits for data communication responses from systems 500 and/or *vending* machines on network 600. If a system 500 or *vending* *machine* on network 600 has been preprogranimed with a network address, then said system 500 or *vending* *machine* data communicates a response to the polling beacon. If, however, a system 500 or *vending* *machine* on network 600 has not been preprogrammed, then a system 500 or *vending* *machine* desiring a network address can data communicate a response to ...server then creates (if not already created) a network configuration database. Data communication can then be conducted on network 600 with any system 500 or *vending* *machine*. Network addresses can take the form of Internet IP type addressing.

Processing in the system self-configuring routine continues until each system 500 and *vending* *machine* has been assigned a valid network address. Processing then returns to the calling routine.

- 39 There is shown in Figure 13, a re-value card...

...universal server. Alternatively, a help desk can initiate a request for "HELP" or "SERVICE" broadcasting such a request to one or more systems 500 or *vending* machines. The help desk can intervene, initiating a "HELP" or "SERVICE" request to effect changes/upgrades/repairs to any *vending* *machine*, any system 500, any universal server, or any other equipment residing on the network 600. Furthermore, a help desk can intervene, initiating a "HELP" or "SERVICE" request to page a customer in a hotel, retail outlet, or other location in proximity to a system 500 or *vending* *machine*. Processing then moves to block 1204.

In block 1204, a data communication between the universal server and the system 500 requesting "HELP" or "SERVICE" occurs...
...or "SERVICE" and the "HELP or "SERVICE" source.

The term "HELP" or "SERVICE" can include a response to interactive advertising, electronic commerce activities or processes, *vending* *machine* usage requests, emergency needs, and other general purpose question and answer requests. The term "LIVE" can include viewing, talking, and exchanging data with another person...600 to provide data communication for "HELP" or "SERVICE" requirements. In addition, any system 500 residing on the network 600 can, by way of the *vending* *machine* interconnected with said system 500, such as a PC 630, data communicate with a remote location to obtain "HELP or "SERVICE" data. Then, by way...

...originally requesting "HELP" or "SERVICE". The original system 500 requesting "HELP" or "SERVICE" can be the same system 500 in which an interconnection with a *vending* *machine*, such as a PC 630 is relied upon to obtain "HELP" or "SERVICE" from a remote location.

Such a remote help desk can reside on...

...the prescribed service, change, or adjustment can be made over network 600. Whether the change is to a system 500, the universal server, or any *vending* *machine* (for example a PC 630) interconnected with a system 500 changes can be made by way of network 600. Such service, changes, adjustments, upgrades, and...

...LIVE" video feed to obtain instruction and have "HELP" and/or "SERVICE" questions answered. As necessary, the operator of the help desk can access the *vending* *machine* (in particular the PC 630) and aid the users in resolving operational, procedural, or other service related problems. Processing then moves to block 1210.

Processing...

...of advertising content can be audio only or visual only or a combination of both audio and visual. In the present invention, a "banner" type, " *point* cast" type, or "multi cast" type advertisement can be displayed on a system 500. In an exemplary embodiment, when a customer desires additional information, audio system 500 generatea telephone call to the "banner" advertising source (business that placed the advertisement).

"Banner, " "*point* cast," "multi cast" type advertisements are generally graphical advertisements commonly found on Internet web pages. In addition, full snap shot icon type advertisements, as well...
...advertising as well as each of the other types of advertising disclosed in the present invention. Advertising content displayed on either a system 500 or *vending* *machine*, such as PC 630 can be monitored, controlled, distributed, and shown by way of network 600 and a universal server.

In addition to the DII...

...such as printer 612A or printer 612B. In an exemplary embodiment, print data can be advertisement print data, transaction summary print data, receipt print data, *vending* *machine* print data, such as from a PC 630, or other print data.

If a system 500 is preprogrammed with a network 600 network location ID ...back to block 1404, wherein the universal server can intervene to best complete the print data request.

There is shown in Figure 17, a POST-*VEND* transaction processing routine 1500.

Processing begins in block 1502, wherein a POST-*VEND* transaction is data communicated to the universal server. Processing then moves to block 1504.

In block 1504, the universal server, by way of DII processing (as required) routes the POST-*VEND* transaction for payment, posting, or billing. The process of payment, posting or billing is generally referred to as "settling" or a "settlement" transaction. Transactions can...

...smart card, pre-paid card, hotel key/card, or biometric) to different remote locations, or to different on-site or off-site databases. Furthermore, post-*vend* transactions can be routed based upon preprogrammed criteria. For example, all credit card transactions requiring "settlement" can be routed to a first credit bureau until...

...requiring "settlement" can then be routed to a second credit bureau. Processing then moves to block 1506.

In block 1506, non-credit card and POST-*VEND* transactions not requiring any additional third party port processing (i.e. by way of a credit bureau) are "settled" by posting the POSTVEND transaction data...

...DII processing (as required) to the appropriate remote location, or

on-site or off-site database. The universal server can be preprogrammed to store POST-*VEND* transactions and "batch" post transaction data based on a preprogrammed criteria. Such "batch" posting preprogrammed criteria can be based in part on date, time, or...

...process of posting any number of transactions at once in a formatted block of data. Processing then moves to block 1508.

In block 1508, POST-*VEND* transactions reliant on a third party processor (i.e. credit cards) are processed in accordance with preprogramming of the universal server.

Preprogramming of the universal...

...disclosed in block 1504, and 1506. Processing then moves to block 1510.

- 46 In block 15 1 0, the universal server determines whether the POST-*VEND* transaction processing was successful. If the POST-*VEND* transaction processing was not successful, that is, the universal server was unable to post process the POST-*VEND* transaction, then the universal server can data communicate the "unsettled" post *vend* transaction to a remote locate. Such a remote location can be a computer center that monitors the functionality of a plurality of universal servers. The...

...a test is performed. A test is performed to determine if a preprogrammed number of hours have elapsed. Each hour a system 500 or a *vending* *machine* interconnected with a system 500 is not operated successfully (a complete *vend* cycle) by a customer, a non-use timer is incremented. When a preprogrammed number of non-use hours has occurred, an error message can be...

...and programmed to respond. Processing then moves to block 1604.

Processing in block 1604, detects if a malfunction has occurred with a system 500, a *vending* *machine* interconnected with a system 500, or a printer, such as printer 612A or 612B.

Other *vending* machines and data processing equipment on network 600 can also be tested for malfunctions. Malfunction error messages that are detected by a system 500 can...

...network 600. The polling is equivalent to requesting each system 500 to perform a self-test, and to perform a test to determine if the *vending* *machine* interconnect with said system 500 is operating correctly. Processing then moves to block 1608.

In block 1608, processing of a detected error condition occurs. The...

Claim
... plurality of status conditions.

32 An electronic commerce terminal in accordance with claim 1, further comprising an equipment control means for controlling usage of a *vending* *machine*.

33 An electronic commerce terminal in accordance with claim 32, further comprising a *vend* counter control means for monitoring, counting, and controlling cycle event of said *vending* *machine*.

34 An electronic commerce terminal in accordance with claim 1, further comprising a mouse/keyboard control means for controlling usage of a personal computer. - 51 16, wherein
said local area network interface can interface to a *point* of sale system.

43 An electronic commerce terminal in accordance with claim 1, wherein

said interactive user response system is further comprised of a speaker
...
...commerce related data, electronic business related data, advertising information, transaction information, phone data, Internet data, or general purpose data.

58 A method of processing post *vend* transaction data by way of an electronic commerce terminal, said electronic commerce terminal being operationally related to a phone
comprising the steps of:
a) data communicating said post *vend* transaction data to a universal server; - 54
b) determining whether post *vend* transaction routing is required;
C) routing said post *vend* transaction data for settlement when required;
d) routing said post *vend* transaction data for posting when required;
e) processing said post *vend* transaction data in accordance with said universal server's programmed settings; and
f) determining if said post *vend* transaction data processing was successful.

59 A dynamic identification interchange method for exchanging one form of identification for another form of identification by way of...
...step; and
C) returning the resultant of step b for further processing.

60 A method of servicing a request from a universal server, a property *management* system, a *point* of sale system, a management information system, a personal computer, and or a user by way of an electronic commerce terminal, said electronic commerce terminal...
?t s23/3,k/7

23/3,K/7 (Item 5 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00516956 **Image available**
METHOD AND APPARATUS FOR COMMUNICATING APPLICATION SPECIFIC DATA OVER WIRELESS COMMUNICATION NETWORKS
PROCEDE ET APPAREIL PERMETTANT DE COMMUNIQUER, VIA DES RESEAUX DE RADIOCOMMUNICATION, DES DONNEES SPECIFIQUES A DES APPLICATIONS
Patent Applicant/Assignee:
AERIS COMMUNICATIONS INC,
Inventor(s):
LADUE Christoph K,
Patent and Priority Information (Country, Number, Date):
Patent: WO 9948308 A1 19990923
Application: WO 99US4638 19990302 (PCT/WO US9904638)
Priority Application: US 9844373 19980318
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AL AM AT AT AU AZ BA BB BG BR BY CA CH CN CU CZ CZ DE DE DK DK EE EE ES FI FI GB GD GE GH GM HR HU ID IL IN IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SK SL TJ TM TR TT UA UG UZ VN YU ZW GH GM KE LS MW SD SL SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH CY DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN GW ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 26883

Fulltext Availability:
Detailed Description
Claims

English Abstract
Communicating messages between a cellular *mobile* radio communicator

(100) and a central monitoring station (120) over a communication network that includes a voice channel and a control channel (372). The voice...

French Abstract

L'invention concerne la communication de messages entre un dispositif (100) de radiocommunication *mobile* cellulaire et une station (120) de surveillance centrale via un reseau de communication comportant un canal vocal et un canal (372) de commande. Le canal...

Detailed Description

... USAT) private satellite DAMA based mesh node networks, time shared TDM/TDMA VSAT networks, permanently assigned multiple access (PAMA) TDMA, direct broadcast satellites (DBS) and *mobile* satellite systems. The present invention also relates to nanocell, microcell, minicell, picocell and macrocell base sites, base transceivers stations (BTS), that are fully integrated with bi-directional Ka, Ku, C band, and L Band communications satellite transceiver earth stations and Ininarsat, teledesic LEO and Iridium LEO *mobile* satellites, *mobile* earth stations (MES), main hub-teleport satellite earth stations.

Description of the Related Art

There are wireless communications systems known in the art today that support multi-formatted data protocols and radio frequency conversion. In fact, the seminal concepts that spawned cellular, PCS, GSM and *mobile* satellite
communications networks originally were from conventional public switch telephone networks (PSTN) for; inter central office switch; inter exchange ANI/wink protocols, and person to...

...invention of 800 number services, centralized calling card exchange data bases and other such means and methods, gave rise to today's cellular, PCS and *mobile* satellite communications technology; that enable automatic roaming, multi standard communications apparatus designs, bi directional *mobile* switching centers, home location registers, SS7 networks,
X.25 networks, ISDN networks, asynchronous transfer mode (ATM) networks and others. These ground breaking concepts are expressed today in contemporary *mobile* switching protocols, satellite ground station protocols, switched satellite protocols (SSP) and base station or base transceiver station protocols; that utilize today's cutting edge mesh...

...and thus creates a quantum leap towards a complete paradigm shift, that enables total; multi mode and or muth communications standard flexibility in and for *mobile* and stationary application specific wireless data communications. The present invention merges multiple cellular, PCS, communication satellite, interriet world wide web (WWW), and broadband fiber optic...technology (USAT) satellite networks were originally designed to support fixed-stationary services. These services include closed business networks that support limited voice, fax, text, video, *point* of sale, security monitoring, utility monitoring, environmental monitoring and supervisory control
and data acquisition (SCADA) telemetry services. VSAT and USAT networks also support branch/ATM banking, credit card verification and other low data time shared services. Also VSAT and USAT was created to enable small terminal
or hand held *mobile* satellite services. VSAT and USAT operate in UHF frequencies, L-band frequencies, X band military frequencies, and Ku and Ka band frequencies. However, there are no satellites or satellite networks that support *mobile* and stationary data terminal services. Current K band satellite do not support *mobile* services because of the inherent limits of *mobile* terminal antenna signal gain characteristics and other such problems such as satellite power and capacity.

The present invention provides the missing low cost *mobile*, by high data
rate link by combining UHF and K band VSAT and USAT fixed *point*, time shared TDM/TDMA satellite terminals and networks, and/or demand assigned

multiple access (DAMA) mesh node VSAT/1JSAT satellite terminals and networks, with existing...

...NMT-450, GSM-900,
GSM-1800, GSM-1900, IS-95 CDMA, IS-136 TDMA, I900Mhz CDMA,
1900Mhz TDMA, 1900Mhz GSM TDMA, SMR-dispatch, Enhanced Specialized
Mobile Radio ESMR-NEXTELL, Cordless telephone systems such as DECT,
CT I -CT2+, PHS and DCS- 1 800, Metrocom mesh node high density, low
mobility systems and other currently operating and planned cellular and
PCS
standards. The present invention combines VSAT, USAT and DBS fixed
point
network data terminal apparatuses and protocols with a specialized data
only control channel mini-base site apparatuses and protocols that will
operate within normal cellular...

...and ESMR air interface, PSTN signaling network standards.

In fact the present inventions means, methods and apparatuses create a complete packet data based application specific *mobile* and stationary communications system, that is cost effective and ...data packet, or signaling channel data packet, containing application specific coded data information bits, is transmitted from a data only, or hybrid voice and data *mobile* or stationary communications apparatus to a specially combined control channel only cellular and or PCS multi sector, or single sector, macro, mini, micro, pico, or...

...normal satellite transponder channels or satellite transponder guard bands and or authentication bands, and is fully integrated with a very small aperture technology (VSAT) fixed *point* satellite terminal via hardware and software means, that in turn transmits via uplink, said converted application specific data packet or packet bundles to a designated the designated *mobile* or stationary communicator. Said base site carries no voice traffic and converts received VSAT data packet or packet bundle protocol into forward analog control channel...

...or forward paging channel, or forward broadcast channel protocol, or forward digital control channel (DCCH), and transmits said data packet to the designated application specific *mobile* or stationary communicator via selected control channels that are fully integrated with an application specific device.

Furthermore, this novel usage of terrestrial cellular and PCS...

...digital control channels, digital access channels, authentication channels, set up channels, signaling channels, that are fully integrated via hardware, firmware and software means with fixed *point* and *mobile* UHF, C-band, Ku band, Ka band and
L band VSAT and USAT UHF, C band, Ku band, Ka band, L band and X band satellite terminal protocols, and assigned satellite transponder channels, guard bands, authentication band networks; that create a new wireless world wide web of low cost *mobile* and stationary application specific data communication capabilities that enables such application specific data services as; two way paging, motor vehicle fleet management, motor vehicle anti...

...watch, medical alert, vital sign monitoring, outpatient tracking, wireless gambling, utility electrical and gas meter reading, oil and gas well head monitoring, security system reporting, *vending* *machine* inventory status and system diagnostics snap shot reporting, *point* -of-sales, Branch/ATM, credit card verification, casino and off site wireless gambling, e-mail access and transfer, intemet access, broadcast messaging, video file transfer...

...136, IS
1049 IS-95@ IS-661, and 2Ghz PCS. Operational platfonns; AMPS, NAMPS, DAMPS, TACS, ETACS, JTACS, NMT-450, NMT-900, Global System for

Mobile (GSM), DCS- 1 800, DCS- 1 900, DCS-900,1900 MHz CDMA, 1900 MHz TDMA, 1900 MHz GSM-TDMA, Nextell-GSM-TDMA, wideband data mesh...causing disruption to conventional cellular, PCS, Broadband, internet and satellite voice and data communications. In fact the present invention does not impact conventional cellular, PCS *mobile* switching centers (MSC), conventional base sites, conventional cable head ends, inter exchange network nodes; copper based or fiber optic based, in that the CCAD-NET...

...voice and control channel frequencies, and without impacting any data link; 56 kbps, TI, line-of-sight microwave resources that are interfaced with the host *mobile* switching center. CCAD-NET-DCS operates without using any capacity resources of the host cellular network, while at the same time providing additional data service...one principle behind the placement of CCAD-NET-DCS base sites.

The present inventions cellular and PCS components of the macro, mini, micro, pico and *portable* nano base sites are designed to provide from one omni directional to three directional analog or digital control channel, or digital access channel, or digital...

...variable burst application specific air interface messaging data protocols, that provide a full range of true throughput data rates from 4800bps to 64 Kbps for *mobile* and stationary application specific data services.

The present invention provides a two way text messaging apparatus that utilizes the inventions unique cellular and PCS, analog...of application specific devices. This same two way paging, or two way messaging video text response can be sent directly over the internet to any *point* of presence (POP), such a business computer network and other such means and methods.

Additionally, this same response message can be sent via the caller... networks is
envisioned or needed.

Communicator means and methods are also disclosed, there is also provided a specialized data packet multi-mode CCAD-NET-DCS *mobile* and stationary communications apparatus. This apparatus can operate within a normal cellular, PCS and wideband data network, by utilizing conventional forward and
reverse analog and...node wideband data; high density/low mobility networks that support high volumes of wireless computer file transfer between a personal computer or personal digital assistant (*PDA*). The present inventions
communications apparatus, and CCAD-NET-DCS mini-hub can support the bi directional transfer of large computer file transfer that require large s forward messaging protocol schemes in no way adversely impact, or disturb conventional cellular and PCS *mobile* user unit and base site voice or control channel wave forms, *mobile* switching center procedures, conventional forward or reverse control channel data protocols. In particular, the present inventions forward analog and digital control protocols are not detectable by conventional cellular *mobile* and stationary *mobile* phones and other devices. Even if the CCAD-NET-DCS base site is placed in close proximity to a conventional cellular or PCS base site...

...and PCS communicators will not scan, and burst a conventional control channel packet to
the CCAD-NET-DCS control channels. Conversely, the CCAD-NET-DCS *mobile* or stationary communicator will not scan and burst its specialized CCADNET-DCS reverse analog or digital control channel application data packet to a
conventional cellular...

...standard IS-4113, and IS-41 C signaling protocols and procedures,

completely embodied in the
present inventions MCMS-Teleport, CCAD-NET-DCS base site, and *mobile* and
stationary applications specific multi-mode communications apparatus. It is envisioned that a variant of the CCAD-NET-DCS base site is configured as a *portable* base site that is battery or solar powered, and can be hand carried and placed into service in a matter of minutes. It is further envisioned that the CCAD
NET-DCS *portable* base site can be used for remote *mobile* and stationary
communications operations focused on commercial, police and military applications, such as personnel, troop movement coordination and motor vehicle tracking and management.

A primary object of the present invention is to provide a method and apparatus for use on wireless terrestrial networks, such as cellular, PCS and fixed *point* and *mobile* communications satellite networks, where the CCAD-NET
DCS virtual network overlay allows for increased capacity, performance, flexibility and function, without impacting the normal or conventional... protocol known in the art today.

It is an object of the invention to provide a multi-mode application specific communications apparatus that will enable *mobile* and stationary
application devices to communicate with the present inventions MCMS-Teleport Hub while using any one or combinations thereof that are widely known cellular...

...an object of the invention to provide both a means and method for Internet World Wide Web (WWW) access over cellular, PCS, wideband data, fixed *point* satellite networks and *mobile* satellite networks utilizing CCAD
NET-DCS base site, communicator apparatuses and MCMS-Teleport hub system. There is provided a CCAD-NET-DCS nano cell base...

...VSAT based networks; combined with
wideband Metrocom high density low mobility networks. That, the present invention is the first to create and combine a fully *mobile*, low density
applications specific short packet control channel based communications medium
with a high density low mobility network, whereby complete co system integration is achieved...WEB TV equipped television monitor, CCAD-NET WEB TV base site, CCAD-NET-DCS communicator, or a CCAD-NET-WEB TV equipped personal digital assistant (*PDA*); and retrieve a graphic display snap shot still image, of the immediate location of a land based motor vehicle, person or object; an aircraft, or...
...county, or other geographic location. This snap shot is graphically displayed on the inventions CCAD-NET-VVEB TV configured television monitor, communicator LCD display, or *PDA* or personal computer multi color video display.

It is another object of the present invention to provide the means and apparatus to create a CCAD...

...CCAD-NET cable television/broadband
CATV/MATV base site that communicates with a CCAD-NET-DCS communicator, and a specialized CCAD-NET personal digital assistant (*PDA*), that enables multi protocol and multi mode communications via international cordless telephone means and methods integrated with the present inventions control channel, SS7 network, internet...specialized ERAAM packet with C-word
removed, and another H word attached, according to the invention.

Fig. 14 is a frontal view illustration of the *handheld* CCAD-NET-DCS GPS based, two way messaging personnel management communications

apparatus, according to the invention.

Fig. 15 is a schematic of the *portable* CCAD-NET-DCS base site according to the invention.

Fig. 16 is an illustration of the *mobile* CCAD-NET-DCS base site according to the invention.

Fig. 17 is a block diagram of the *portable* and *mobile* CCAD-NET-DCS base site automatic cellular and PCS carrier and channel detect protocol, according to the invention.

Fig. 18 is an illustration of the CCAD-NET-DCS cellular, cordless telephone and broadband/WEB TV multi function nano multi fimction base site and *PDA*, according to the invention.

Fig. 19 is a schematic diagram of the CCAD-NET-DCS MCMS Teleport Hub system and other essential network elements, according...

...CCAD-NET-DCS multi platform mesh node micro network multi pathway backbone, according to the invention.

Fig. 25, depicts the CCAD-NET-DCS multi protocol *PDA*, according to the invention.
Fig. 26, depicts the CCAD-NET-DCS TV base site television set as messaging medium, according to the invention.

DETAILED DESCRIPTION via a specialized MCMS Teleport data management hub; that controls and communicates with a unique low density, highly *mobile* application CCAD-NET-DCS base site node, and or control and communicates with a unique high density, non *mobile* application CCAD-NETDCS multi platform base site node, and or communicates and controls with a specialized CCAD-NET-DCS base site node that is capable of supporting *mobile* and stationary cellular and PCS specialized application specific control channel communications and specialized non *mobile* wideband data computer data file transfer communications. The present invention can operate within the means and methods of DAMA mesh topological internode communication schemes, and...

...node, and CCAD-SAT cell base site; whereby hardware, firmware and software means provide; synchronous and asynchronous data protocols, and protocol conversion procedures, with fixed *point* and *mobile* satellite; HEO, MEO, LEO, polar orbit, inclined orbit, geosynchronous, bent pipe, transponder, satellite switched data (SSD), DAMA protocols, PAMA circuit protocols, CDMA spread spectrum multiple...base site multi-processing system II 7 as depicted in Fig. 8. This particular ERAAM packet is designed to operate in accord with the American *Mobile* Phone (AMPS), Total Access Communication System (TACS) analog cellular standard. Referring to Fig. 1, the multi-processor input 144 receives the ERAAM, attached a unique...or packet bundle, it is processed in accord with the operational parameters established that particular application such as; two way paging, global positioning based fleet *management*, *point*-of-sales, asset tracking, utility meter reading, wide band data computer file transfer, et. al.. The application provider, or facilitator prepares via firmware, software and hardware means, a forward application specific message to be transmitted; *point* to *point*, or *point* to omni *point*; a application device update command, a polling of status message, a trigger event, an alpha numeric message to be read by a user, a global...frequency, that transmits the packet or packet bundle to a specific CCAD-NET-DCS base site, or to a group of base sites in a *point* to onmi *point* broadcast means and method 308. The CCADNET-DCS base site, also known as the CCAD-NET-Earth Station (CES) receives the single packet or packet PCS
handset, or a GPS based home arrest communicator, or a personal digital assistant
(*PDA*) based communicator. The application specific communicator 1 00 can

operate within a wide range of analog and digital cellular and PCS standards and assigned frequencies from 450 MHz to the 2 GHz range 372. There is provided an application specific personal digital assistant (*PDA*) 554, that transmits,
receives and processes microburst ERAAM and EXRAAM application specific data packets, variable burst remote access application messaging (VBURST) packets within conventional cellular...

...data networks, or via the inventions specialized digital control and traffic channels that an integral
component of the CCAD-NET-DCS base site. The same *PDA* 554 can also transmit and receive wideband computer data files, large data bit graphic files, video image file transfers. Referring to Fig. 25, the CCAD-NET-DCS *PDA* 554 is configured to perform many multi mode functions. In this particular example, the *PDA* 554 has a split personality, part cellular or PCS handset 589x it has all the conventional controls and display 592. However the entire unit opens...

...that the back of the handset 5 8 9y encloses a proportionately large liquid crystal display (LCD) 593. The other half or bottom of the *PDA* 554x contains controls that perform the same functions as a computer keyboard with additional duplicate cellular or PCS handset controls. The functions are well known to those whom practice the art, therefore a detailed
description is deemed necessary. The LCD display 593, reveals some menu driven choices that the *PDA* can perform upon man machine interface intervention or by automatically derived operations via fin-nware and software programming means, exponentially expressed within automatically controlled command and status response events. For example this particular *PDA* is able to send and receive Microburst control channel data messaging 5 6 1, and extended microburst messaging system (EMS) 562, also known as variable burst remote
access application message (VBURST). This *PDA* can also send and receive wideband data messages 563, also known as Macroburst Application Specific (MAS) messaging system. This *PDA* is enabled to send and receive CCAD-NET
TV interface messages and service related instructions; such the inventions
CCAD-NET-WEB TV GPS location services...peak data throughput rate of a given event, and how many channels it can access or utilizes per event. Some application specific events such as *point* to multiple protocol *point* delivery of group class messages require more over all system capacity
than do *point* to *point* message event deliveries. The CCAD-NET-DCS returnlink data packet is comprised of an application data field 534, the retumlink overhead field (ROH) 158, unique...In fact, while comparing the present inventions means and methodology with envisioned PCS satellites such as the Iridium network, the Teledesic network, Globalstar, the American *Mobile* Satellite Communications network (AMSC), and others. These networks, at best will only provide data rates of 5kbps. The networks are based
upon marginal geo synchronous satellite networks, low earth orbit (LEO), medium earth orbit (MEO) and others. These networks envision *handheld* units
that communicate directly ...dollars a minute for voice and data services with rates of only 5kbps.

In addition, there are no plans to provide low cost application specific *mobile* and stationary communications services. The present invention clearly provides
profound advantages over these aforementioned services. The CCAD-NET-DCS network can provide cellular and PCS...

...communicates with a conventional cellular and or PCS base site IO 1 as depicted
in Fig. 6., which in turn communicates with the currently serving *mobile*

switching center (MSC) 535. Additionally, this same GPS based communicator
100c communicates with the CCAD-NET-DCS base site 102, when traveling within the effective...global action words exist to perform a rather narrow scope of message ftitictions, the present invention provides for application specific global action words that support *point* to *point* forward messaging; that is
a message sent from the MCMS Teleport to the CCAD-NET-DCS base site via satellite network means, that is designated...four word message therefore provides a 15 character message that can contain GPS receiver instructions, a forward page message, email indicators, utility meter remote control, *vending* *machine* inventory reports, home arrest communicator and associated wrist band status, and a host of many other variations on this configuration. In fact, including word one...multiple access (TDMA) master control terminal 545. These main terminals can be any type of computer, that utilizes a viable operating system. Most service control *point*, systems utilize Sun/Sparks Unix 166 based systems. These Unix tenninals, capture, process and store all incoming and out going application specific data. When the...

...provider action messages through the various terminal procedures to the SS7 packet switching subsystem 522 via the multiport router 523 to the proper network entry *point* in the IF subsystem 521. Similarly, the SS7 packet switching subsystem 522 and the multiport router 523, routes messages from each CCAD-NET-DCS base...public switched telephone network. In still another scenario, the forward message request can originate from the present inventions CCAD-WEB TV television monitor 517, the *PDA* 554, as depicted in Fig. 18, and other specially configured apparatuses such as a *portable*
personalcomputer. Themessagedeliverymediumcanbeacellularbased IS-136 DCCH forward messaging service, an IS-95 CDMA forward messaging service, an upbanded CDMA forward messaging service, an upbanded TDMA forward messaging...

...CCAD identification number
CIN. The B word 126, contains the NPA 133 of the CIN number. This three digit
code 175, acts as the destination *point* code (DPC). This 175 number is a
derivative number that is closely related to a conventional telephony area code.

However, this code does not allows for conventional dialed number PSTN access.
Therefore, the CIN acts only as an identification and routing number. The communicator or *PDA* cannot be accessed from a conventional landline telephone. The C word contains the eight character CCAD serial number (CSN) 136. In some CCAD related applications, this number is used to identify the present inventions application specific communicator or personal digital assistant (*PDA*), especially if the communicator is configured for cellular or PCS voice service authentication, and authorization. Still in other derivative applications, the
CIN is solely used for CCAD communicator or *PDA* identification. In some applications the CIN is permanently embedded via hardware and firmware means, in the same secure manner as conventional cellular and PCS electronic...the art, so specific references to this conventional procedure are omitted. Broadly, the remote feature access causes specialized routing to occur when the currently serving *mobile* switching center (MSC), receives an origination packet; which is indicated by the order qualifier code ORDQ 134, and the order code ORDER 13 5, containing...

...location register or data clearing register (HLR/DCR) 162, as shown in Fig. 5 and Fig. 19. The HLR/DCR is a service connection control *point* (SCCP) with its own unique global, cluster and node address; such as 227 255. The currently serving MSC therefore translates the ten digit number; 175421...base site 102 and other virtual network

elements, or it can operate with a conventional cellular or PC S base site 1 0 1, and
mobile switching center (MSC) 535. As heretofore described, the EXRAAM packet as depicted in Fig. 7 and ERAAM packet depicted in Fig. 13, can operate in...is relayed to the inventions MCMS Teleport Hub 106, via the currently serving SS7 network 262. The packet is converted to SS7 compatible TCAP and *mobile* application part (MAP) intersignaling protocols by the MSC 535, relayed to the nearest serving signaling transfer *point* (STP) 109. The STP is a dynamically managed receiving, routing, and data packet transfer medium, that is an essential SS7 network element. STPs are placed and arranged in a mesh node topology, that allows for multiple SS7 link transfer from one STP to another, or from a service connection control *point*
(SCCP) to many STPs, or from one STP to many SCCPs or service switching points (SSP). An SSP is the SS7 compatible signaling processing node...

...and H[2] word 132 as depicted in Fig. 7. In this instance, the two words contain a directory number that a landline telephone or *mobile* phone user dialed, and entered his ten digit directory number. The area code or NPA '408' 425, contained in H[2] word 132. The NXX...be stored in the CCAD-NET-TV
internet/broadcom server data base 612, and then forwarded automatically or via manual command to a CCAD-NET *point* of presence net return pathways 613.

This data base is an important derivative of a conventional e-mail system, that has
automatic e-mail indicators...caller I.D. services. The
invention extends this feature to include alpha numeric messaging, that originated from one of the invention application specific communicators and *PDA*. When a calling party's number is sent to a designated telephone instrument that has the capability of displaying the calling party's telephone number...configured CCAD-NET-DCS base site
555 acts as the front end air interface medium. The base site further acts as a multi service convergence *point* 586. The broadband multi services network 568 acts as the data multi service communications transport medium 5 8 5 that delivers the bi directional data to the MCMS Teleport Hub 106, and the MCMS network management subsystem 525, with the specialized cable headend 584 acting as data processing convergence *point* on the back end. All the heretofore mentioned systems and services can operate independently, and completely separate from other conventional cellular, PCS and/ or satellite...
...base site will support any designated communicator such as the personnel management communicator I 00c that uses
Microburst and Vburst data protocols, and the CCAD *PDA* 554 that uses Microburst, Vburst and Macroburst bi directional data protocols. The *PDA* 554 also may operate in conventional cellular and PCS network base sites IO 1, *mobile*
switching centers (MSC) 535, and SS7 networks 262, in the aforementioned means and methodology. The *PDA* can be configured to transmit and receive
Microburst 561, Vburst 562, utilizing from 450 Mhz to 2Ghz cellular and PCS frequencies 372 that transport the...much is the same way that conventional electronic serial (ESN) are
embedded in cellular and PCS communicators and handsets. Because conventional cellular and PCS network *mobile* switching center (MSC) translation tables data bases processes data in certain hierarchical means and methods, the ERAAM data words are specially arranged to completely conform...computer file data packets.

Referring to Fig. 14, Fig. 18, and Fig. 25. The personnel management communicator I 00c depicted in Fig. 14, and the *PDA* 5 5 4 depicted in Fig. 1 8, and
Fig. 25 are configured to collect, process and transmit complete global positioning (GPS) data utilizing specialized Microburst, Vburst, and Macroburst protocols. These application specific protocols can operate within cellular, PCS,

mobile satellite, wideband data and cordless telephone FDD and TDD air interface frequencies and protocol standards. Referring to Fig. 7, and ...satellite compatible base sites. When an application packet containing GPS data and or other location based data is transmitted from an application specific stationary or *mobile* communicator and or *PDA* communicator, and processed through a conventional network or the inventions CCAD-NET-DCS virtual network, the same packet processing and packet delivery procedures apply.

Referring...

...terminal 167, it distributes the data to the appropriate data base. The GPS data packet can originate from personal management communicator 100c, or the inventions *PDA* 554. The GPS data packet can be received by the inventions cell/sat CCAD-NET-DCS base site 102, relayed to geo synchronous satellite 107... GPS packet can also originate from a conventional cellular or PCS network, represented here by a conventional cellular or PCS base site IO 1 and *mobile* switching center (MSQ 535 located in New York City. For example, this conventional network might by operated by Bell Atlantic Nynex, Airtouch Communications, or any...

...the GPS packet to the DRD 167 for ftirther processing.

The GPS packet can be relayed to the MCMS Teleport Hub 106 from another network *point* of origin. Referring to Fig. 23. Depicted here is a representation of the inventions hybrid mesh topology node/star topology node network 546 (HMS). This network supports; all Microburst, Vburst and Macroburst data packet protocols. Each one of the base site nodes 'a' through 'o' support the inventions *PDA* 554, and all the inventions application specific stationary or *mobile* communicators 549. For example, if a *mobile* based GPS communicator travels in this network and transmits to node 'in,' node 'in' then relays the GPS packet to all other nodes depicted here...

...Teleport Hun 106 where it is processed in accord with the heretofore mentioned processes and procedures. The GPS data packet can originate from the inventions *PDA* 554 and is processed in essentially the same manner. The inventions HMS network can be manage by a CCAD-NET-DCS Mini Hub 543. This...

...hub maintains authentication data bases, counts data packets, and controls packet routing. For example, an application specific communicator 549 can transmit a packet to a *PDA* 554, without the need of the transaction being sent to and ...time, and internet capacity. The mini hub 543, also transmits packets sent from PDAs 554 and application specific communicators 549, that are intended for other *PDA* and communicators operating in other HMS networks, conventional cellular and PCS networks, and CCAD-NET-DCS base site elements that are operating in remote areas...

...passenger jet liner 5 09, or an ocean going ship 5 1 0. A nano base site 51 lj, application specific communicator 100j and a *PDA* 554j can operate in a specialized means and method, can operate on a commercial jet liner.

A user may want to communicate to another user, or an applications provider located on the ground. If so the invention provides for cellular, PCS or *mobile* satellite data protocols that will operate on conventional Airphone cellular or PCS frequencies that are allocated by the FCC. The control channel, and digital access...

...methods and means. The invention can provide effective anti bombing means and methods. Because the present inventions data protocols adhere

to conventional cellular, PCS, and *mobile* satellite protocols; unconventionalemergency data packet transmissions will not be detected and deciphered by terrorist groups, for the conventional operations of Airphone cellular and PCS
networks...cellular and PCS networks are configured.

The invention provides unique application specific services for the Livery Industry, in that a nano base site 51 lk, *PDA* 554K and application specific communicator I OR can be installed in a limousine 63 0. This system provides everything from the inventions debit prepay voice ...

...it provides for air craft. An ocean going ship can be configured to utilize a nano base site 51 lh, a mini hub 543b and *PDA* 554h and application specific communicator I 00h. This system can be configured to support the heretofore mentioned commercial application specific communicator and *PDA* communications. The ship can also send GPS packet data, via inventions *mobile*
and Maritime satellite protocols, such as INMARSAT, Teledesic, Iridium, Globalstar, and AMSC satellite networks. The inventions Maritime applications include but are not limited to off...to add additional application specific data service capacity, a separate CCAD geo synchronous satellite communication based virtual network, a CCAD mesh node wideband data hybrid *mobile* and stationary services network, a *mobile* satellite network, and others; a forward message is sent to the motor vehicle that causes it to respond with the
heretofore mentioned GPS data packet...means 614, as depicted in Fig. 18.

In Fig. 18, the CCAD-NET-GATEWAY 555b is configured as a set top box base site. Alternatively, *PDA* 554 can become a remote control device that
can communicate with the CMS over the DBS network, thereby obviating the requirement of a set top...

...programming, and other special event programming requests and other DBS service authorizations can be sent to the DBS satellite control center 635, that is a *point* of presence on the intemet. The inventions set top box base site 555b, acts as the conduit to conventional cellular, PCS and wideband networks. Additionally...NET server system can periodically send location update images and image waiting indicators to the users personal computer, CCAD-NET TV console, or specially configured *PDA*.

Referring to Fig. 25, the *PDA* 554, can be configured to receive the inventions snap shot images via the inventions Vburst data packets, and mesh node wideband data packets. These packets...

...images require relatively large amounts of data. However, the inventions relative location snap shots can easily transmitted to the inventions PDAs, via cellular, PCS and *mobile* satellite based forward traffic channels. For example, a user can be operating in any of the heretofore mentioned CCAD-NETDCS networks, send a location request and receive the inventions relative location snap shot mapping image, by selecting CCADNET TV services 587 on his *PDA* 554 screens 593 GUI menu selection. This operates similarly to how the CCAD-NET TV console and monitor user retrieves relative location information.

Referring to...building of a package transfer depot. By combining a package carrier's conventional tracking software, and logistical management software, with the inventions heretofore described GPS *mobile* location system, a new package management system is created. This system is immediately accessible to any user that interfaced with the present inventions CCAD-NET...
...or a stored predetermined message can be sent. The user can also send just a numeric message or page to the application specific communicator or *PDA* user. The messages are sent to the inventions MCMS Teleport Hub via the internet, and forwarded to the currently serving CCADNET-DCS network area via...

...be interfaced via the heretofore disclosed
image transfer means and the CCTV security camera image can be sent to a remote personal computer, the inventions *PDA*, or the inventions CCAD-NET
TV console and monitor, or to an application provider such as a private or public law enforcement agency.

Image Mail...

...consoles to locate home arrest
subjects, and keep ways. A parole officer, probation officer or other law enforcement officer can be equipped with the inventions *PDA* to locate a home arrest sub.ect, by simply transmitting a snap shot request to the currently serving CCAD-NET-DCS network, and having that network respond sending the relative location snap shot image or text message to the *PDA* to either show or spell out in text form a home arrest subject's current location.

Referring to Fig. 18, a person's home 505...displayed on the users, or message callers conventional TV screen without modifying the TV or the host cable television network.

The invention provides for specialized *portable* and motor vehicle mounted base site configurations. These specialized base site configurations can be used by police and military organizations. Referring to Fig. 15 and...

...19, there is provided CCAD-SAT based nano base site 375, and 375b. In Fig. 15, the nano base site 375b is configured for specialized *mobile* applications. It is equipped with a fold out satellite antenna array 376, a solar electric panel 106, and carrying handle 3 81 and a telescopic...

...or digital control channel sector antenna. This single sector base site can be configured to operate with all known cellular and OCS frequencies 372. This *portable* base site can operate in geographic areas where conventional cellular or PCS service does not exist, or where it does exist. This base site 375b, can be set up easily. Once it is physically set up, its specialized electronics come into play.
Referring to Fig. 17, the inventions *portable* base has an LCD display 382.

The display provides user interface to menu driven controls, via a PC type command prompt 3 8 3. The display also provides a solar power and battery level indicator 3 8 5.

After the *portable* base site is set up, and the telescopic antenna is extended the following automatic procedures occur. The base site scans all relevant radio frequencies, and...

...and forward application specific messaging transmissions 500. Once the base site detects the presence of the inventions application specific communicator(s) I 00 or a *PDA* 354, it then transmits received VSAT network originated messages 501. The base
site then can also receive CCAD-NET-DCS messages and convert them for...

...motor vehicle such as this depicted van 378. There is provided a single or multiple sector cell 377. This system operates exactly like the disclosed *portable* base site. Both the *portable* base site and motor vehicle mounted base site can support data rates of up to 155 Mbps 567 when transmitting packets and packet bundles to...
...This high data rate can be used with conventional Ku band uplink frequencies 374 and downlink frequencies 373.

While the inventions application specific communicators and *PDA* cannot support 155 Mbps data rates, these same base sites can be configured to provide specialized network to network data links.

Referring to Fig. 20...whereby other of the present inventions application specific networks can send information to and from this gateway via a geo synchronous satellite 107, from any *point* on the Face of the Earth. The outlink or down link 373 and return link of uplink 374 can support the inventions specialized VSAT 64Kbps data packets and packet bundles. This base site is a *point* of presence on a private or public SS7 network with its own global, cluster and node address.

Conversely, there is provided a cellular or PCS...

Claim

I A method for communicating messages between a communicator and a central monitoring station over a *mobile* communications network that includes a voice channel and a control channel, wherein the voice channel conveys data messages and the control channel conveys control messages... central monitoring station in response to detecting the remote feature control request comprises the steps of detecting the remote feature control request at a cellular *mobile* radio switching center and forwarding the remote feature control request and the encoded message over at least one inter cellular serving area link between the cellular *mobile* radio switching center and the central monitoring station in response to detecting the remote feature control request.

11 The method of claim 1 0, wherein the inter cellular serving area link between the cellular *mobile* radio switching center and the central monitoring station operates according to the signaling system 7 (SS7) protocol standard.

12 A method for communicating messages between a cellular *mobile* radio (CMR) communications device and a central monitoring device over a communications network that includes wireless digital traffic channels, satellite communication channels, and inter cellular...

...of digits from the
CMR communications device to a base station over the control channel, bypassing the voice channels, the call origination message specifying a *mobile*
identification number (MIN) identifying the CMR communications device;
d) transmitting the call origination message and the sequence of digits from the
base site to the...TDMA) digital broadcast control channel.

20 The method of claim 19, wherein the TDMA digital broadcast control channel operates in accordance with global system for *mobile* communications (GSM) standards.

21 The method of claim 12, wherein the message comprises a response to an instruction received at the CMR communications device from...step of receiving the message comprising receiving tracking data.

26 The method of claim 22, wherein the step of encoding the message comprises manipulating a *Mobile* Identification Number (MIN) of the communicator to include the message.
27 The method of claim 22, fin-ther comprising:
receiving the message as encoded over...

...channel at the central
monitoring station; and
decoding the message.

28 The method of claim 27, wherein step of encoding the message comprises manipulating a *Mobile* Identification Number (MIN) of the communicator to include the message, and wherein the step of transmitting the message comprises transmitting the MIN as manipulated.

29...

?t s23/3,k/8

23/3,K/8 (Item 6 from file: 349)
DIALOG(R)File 349:PCT FULLTEXT

00411544
VARIABLE BURST REMOTE ACCESS APPLICATION MESSAGING METHOD AND APPARATUS
DISPOSITIF ET PROCEDE DE MESSAGERIE PRESENTANT UN ACCES CONTINU VARIABLE A DISTANCE

Patent Applicant/Assignee:
AERIS COMMUNICATIONS INC,
LA DUE Christoph,
Inventor(s):
LA DUE Christoph,

Patent and Priority Information (Country, Number, Date):
Patent: WO 9802004 A2 19980115
Application: WO 97US16176 19970710 (PCT/WO US9716176)
Priority Application: US 9621516 19960710; US 96696250 19960813
Designated States:
(Protection type is "patent" unless otherwise stated - for applications prior to 2004)
AL AM AT AT AU AZ BA BB BG BR BY CA CH CN CU CZ CZ DE DE DK DK EE EE ES FI FI GB GE GH HU IL IS JP KE KG KP KR KZ LC LK LR LS LT LU LV MD MG MK MN MW MX NO NZ PL PT RO RU SD SE SG SI SK SK SL TJ TM TR TT UA UG US UZ VN YU ZW GH KE LS MW SD SZ UG ZW AM AZ BY KG KZ MD RU TJ TM AT BE CH DE DK ES FI FR GB GR IE IT LU MC NL PT SE BF BJ CF CG CI CM GA GN ML MR NE SN TD TG
Publication Language: English
Fulltext Word Count: 26317

Fulltext Availability:
Detailed Description
Claims

English Abstract
A method and apparatus for full-duplex data communication in or for a wireless communications network, such as a cellular network, PCS network, or *mobile* satellite network, where a remote feature access control operation utilizes a switch to reserve and route selected voice channels or traffic channels in response to the remote feature access control operation. The method comprising the steps of: configuring a *mobile* switching center (MCS) (104) to route the selected voice channels (506) to a multi-port protocol converter (351) (MPPC) for transmitting a selected data message...

French Abstract
...dans un reseau de telecommunications ou pour ledit reseau, tel qu'un reseau cellulaire, un reseau de systemes personnels de communication (PCS) ou un reseau *mobile* par satellite, dans lequel une operation de commande d'acces a distance met en application un commutateur afin de reserver et d'acheminer des canaux vocaux ou des voies de trafic selectionnes en reaction a ladite operation. Ce procede consiste a elaborer la configuration d'un centre de commutation *mobile* (MSC) afin d'acheminer les canaux vocaux selectionnes vers un convertisseur de protocole a acces multiples (MPPC) servant a transmettre un message de donnees selectionne...

Detailed Description
... receiving wireless data messages. More specifically, the invention relates to data transmission methodologies and apparatuses for data messaging on wireless communications networks such as Cellular *Mobile* Telephone (CMT),Personal Communication Systems (PCS), Global System for *Mobile* (GSM), and *mobile* satellite networks such as Iridium Satellite and Teledisc Satellite communications networks.

2. Description of Related Art

A variety of methods and apparatuses have been proposed...

...invention provides a method for greatly increasing the capacity, performance, coverage, and delivery of data messages over wireless communications networks such as cellular, PCS, and *mobile* satellite. The present invention utilizes a variable burst remote access application messaging (VBRAAM) method and apparatus to seamlessly, and in an essentially transparent manner to 977 for transmitting data messages over control channels, for monitoring, control, and communication with various *mobile* and/or stationary apparatuses, two-way paging applications, vehicle tracking, and the like. Other patent filings by the present inventor disclose a remote access application...

...to the instant disclosure are patent applications filed by the present inventor for voice and data debit billing methods and apparatuses for cellular, PCS, and *mobile* satellite.

Examples of such filings are U.S. Patent Application Serial Nos. 08/619,363 and 08/619,960. The present method and apparatus for...

...networks allowing for two-way data messaging, paging, text communication for short messaging, file transfer and Internet access over cellular, personal communications systems (PCS), and *mobile* satellite networks.

Examples of wireless communications networks allowing for two-way communications include cellular *mobile* radiotelephone (CMR), which is linked to the public switched telephone network (PSTN) and allows for communications between two *mobile* radiotelephone users or between a *mobile* radiotelephone user and a conventional phone. Conventional CMR networks feature a radio coverage area divided into smaller coverage areas or "cells" using power transmitters and...June 1 1, 1996, where a data messaging method and apparatus are disclosed for data messaging on a CMR paging network using the manipulation of *mobile* identification numbers (MIN) and electronic serial numbers (ESN) to send a message over the control channels. A related disclosure, PCT International Patent Application WO 95...

...likely allocate the 1 1.99 Ghz band to PCS. This band is occupied by private operational fixed microwave users who use this band for *point* -to-*point* microwave transmissions.

A significant challenge to PCS operators will be configuring systems around existing users without causing interference to those users. Efficient methods and apparatuses 0 The disclosed method and apparatus may also be used with *mobile* satellite wireless networks, and acts as a public-land-*mobile*-overlay (PLMN) when signaling systems such as signaling system seven (SS7), IS-41, CITT Blue Book and Red Book 56 kbps, and 64 bps automatic...

...IS-TDMA, IS-95 CDMA dual mode cellular, and the like. Other networks where the present method and apparatus are applicable include Global System for *Mobile* (GSM), DCT- 1 800, DCT 1900, Personal Digit Cellular (PDC), Digital European Cordless Telephone, Personal Handy Phone System (PHS), Cordless Telephone Systems (CTS), and the...

...apparatus is a true full-duplex technology, and functions as a national or international system footprint which is essentially invisible to the cellular, PCS or *mobile* satellite operator. The VBRAAM method does not require any hardware infrastructure changes to existing cellular, PCS and *mobile* satellite networks. The disclosed method and apparatus allows for two-way data messaging, paging, text communications, real-time metered billings, file transfer, Internet access via cellular, PCS or *mobile* satellite, and a wide range of other data messaging and remote application and control functions of both stationary and *mobile* objects.

SUMMARY OF THE INVENTION

Accordingly a method for full-duplex data communication in or for a

wireless communications network is provided, where a remote...

...means to reserve and route selected voice channels or traffic channels in response to the remote feature access control operation, the method comprising: configuring a *mobile* switching center (MSC) to route the selected voice channels to a multi-port protocol converter (MPPC) for transmitting a selected data message on the selected...

...communications network. This variable burst remote access application messaging (VBRAAM) methodology may 1 5 be utilized on wireless communications networks, such as cellular, PCS, or *mobile* satellite. The selected data message used in the disclosed methodology preferably includes a selected dialed digit stream for communication over the wireless communications network and from the MSC.

The remote feature access control operation is preferably a standard IS-41 feature that allows a *mobile* user to manually enter call routing instructions to a home location register (HLR).

Once received, the HLR causes all of the user's *mobile* or land calls to be routed to another destination. Message waiting indicators may be sent back to the user via the SS7 network to the current serving network, and then telayed to the *mobile* phone user via forward channels or reverse voice channels, traffic channels, or control channels. The present invention utilizes the remote access feature control parameter quite...

...module routing ports. For example, during a remote feature access control operation, a currently serving switch reserves and routes a forward voice channel to the *mobile* unit that has activated the remote feature access control operation. The switch also routes the assigned voice or traffic channel to a sound card or...

...a voice recording that instructs the user about the status of that particular remote feature access control operation request. Such aforementioned events do not cause *mobile* switching center billing systems to cause a billable event. Therefore, under current operating standards, the remote feature access control operation is not a billable event...

...the present invention MPPC. The MPPC functions as a data protocol converter and data processing terminal that is 1 5 preferably rack mounted at the *mobile* switching center (MSC). The MPPC unit may also function as a *point*-of-presence (POP) on the Internet world wide web (WVAV). Software and hardware means connect the MPPC unit logically via special Internet protocols to a...messaging center (MC) is preferably interfaced directly with the SS7 network via a specially configured home location register (HLR). The HLR is a service control *point* (SCP) on the SS7 network. The HLR preferably receives a remote access application messaging (RAAM) packet and detects that this event is a VBRAAM request ...

...the VBRAAM communicator detects the tail bits, the communicator then terminates the message call, the currently serving base site performs call-teardown procedures, and the *mobile* switching center (MSC) completes the VBRAAM event.
A wide variety of data messages may be transmitted using the disclosed methodology.

Examples include global broadcast messages, user group messages, *point* -to-*point*, *point*-to-omni 1 0 *point*, land-to-*mobile*, and *mobile* messages may be sent in this unique and cost-effective manner.

For example, a VBRAAM user can send a message from his communicator or phone...

...business users whom are in the same pre-programmed user group, even if each designated user is 1 5 operating in different cellular, PCS, or

mobile satellite markets.

The VBRAAM methodology and apparatus can provide variable length text messages, 41pha-numeric messages, encoded debit phone control messages in various data word...alert, anti-fraud, anti-cloning, and numerous other selected data messaging communications. The length of the message depends upon the currently serving cellular, PCS, or *mobile* satellite's air interface protocol, and how the remote feature access control operations procedures are programmed. The VBRAAM messaging system is platform independent, and do...

...MSC that is currently serving a particular voice call to terminate it upon command from a remote location such as an HLR that is a *point* of presence on the host SS7 network. The HLR or any other service control *point* (SCP) can send an IS-41, SS7 message to the currently serving MSC to "drop" the call in such a way that does not disrupt...

...data communication, debit phone authentication, call and data message activity management, automatic roaming, and other such features. The VBRAAM communicator may also be assigned a *mobile* identification number (MrN) and electronic serial number (ESN) for local cellular market land-to-*mobile* and *mobile* access. This MIN and ESN can be restricted to a designated local market or allowed to roam, depending on the wireless communications network and particular...remote feature access control operation. The method may utilize remote feature access control operation of an IS41 remote feature control operation to communicate to a *mobile* switching center (MSC), and one or more translation tables to route the selected voice channel to a signaling unit.

Means for transmitting data messages on...

...wireless communications network; and means for transmitting a selected data message on the wireless communications network in response to receiving the data message from the *mobile* switching center (MSC).

Accordingly, a primary objective of the present invention is to provide a method and apparatus for use on wireless communications networks, such as cellular, PCS, and *mobile* satellite, enabling MI-duplex communication thereby increasing capacity, performance, coverage, and ftmctionality of the wireless communications network.

It is an object of the invention to...

...It is an object of the invention to provide both a means and method for real-time metered billing for use in landline, cellular, PCS, *mobile* satellite, and other wireless communications networks.

1 5 It is an object of the invention to provide both a means and method for preventing fraud...

...communications network.

It is also an object of the invention to provide both a means and method for Internet WWW access over cellular, PCS, and *mobile* satellite networks.
Additional objects and advantages of the invention will be set forth in part in the description which follows, and in part will ...the I 0 invention.

Fig. IO shows a communicator apparatus, according to the invention
Fig. I I shows an embodiment of a personal digital assistant (*PDA*) keypad operably linked 1 5 to communicator I 00, according to the invention.

Fig. 12 shows the VBRAAM fall-duplex variable messaging RSE request data ...voice channels or traffic channels in response to the remote feature access control operation. The method, in a preferred embodiment, 1 5 comprises configuring a *mobile* switching center (MSQ to route the

selected voice channels to a multi-port protocol converter (MPPC) for transmitting a selected data message on the selected may be provided configured for communication over a wireless communications network as, for example, a *mobile* phone, a pager, a phone configured for real-time metered billing and debit messaging and tracking (DEBIT), a meter reader, a communicator for monitoring and control of remote stationary devices, a communicator for monitoring and control of remote *mobile* devices, and the like. The communicator referably comprises: means for data communication in or for a wireless communications network where a remote feature access control...

...wireless communications network; and means for transmitting a selected data message on the wireless communications network in response to receiving the data message from a *mobile* switching center (MSQ. The communicator is further characterized in that the means for data communication on the wireless communications network includes means for transmitting, receiving...

...the VBRAAM methodology are shown. The VBRAAM method may be used in or for a wireless communication network such as a cellular network, PCS, or *mobile* satellite wireless communications network, where a remote feature access control operation, which is a conventional remote feature access control operation in such network, utilizes switch...

...channels 502 in response to the remote feature access control operation. The preferred method comprises the following steps shown in Fig. 1. First, configuring a *mobile* switching center (MSC) 104 to route selected voice channels 506 to a multi-port protocol converter (MPPQ for transmitting a selected data message 504 on...In Fig. IA, a VBRAAM full-duplex messaging pathway and apparatuses are shown, and as previously mentioned, may be applied to any cellular, PCS, or *mobile* satellite wireless communications network. The VBRAAM communicator 100, which may be configured as a
- WO 98/02004 15 . . PCTfUS97/16176
mobile cellular phone, pager, PCS communicator device, Personal Digital Assistant (*PDA*) device, or the like, sends and receives data messages, such as selected data message 504 on the selected voice or traffic channels 506 and the...

...messaging channel 512 as described, and collectively designated as full-duplex air interface 476. A base site 1 0 1 communicates with the currently serving *mobile* switching center (MSC) 104 and processes and distributes the selected data message 504 via the VBRAAM method detailed in reference to Fig. 1. The MPPC...

...in the wireless communications network, the VBRAAM method is preferably applied as follows. The MSC 104 communicates with the home location 1 5 register-service *point* (HLR/SCP) 152 via Signaling System Seven (SS7) 115 protocols. The MSC 104, using full-duplex switching pathways, communicatively links communicator I 00 with MPPC...

...a selected data message 504 is to be transmitted via forward voice or traffic channels, and such selected data message is originally transmitted from a *point* on YAM 352, or the public switched telephone network (PSTN) I 10 to a communicator I 00, it may be stored at MPPC 351 or...configured for air interface downlink protocols such as broadcast paging forward messaging 478, broadcast control channel forward messaging 479, as detailed in Global System for *Mobile* (GSM) standards, digital control channel forward messaging 480 as specified in interim standard PCTfUS97/16176
- WO 98/02004 16
136 (IS- 1 3 6), *mobile* satellite forward messaging 477, as specified in Inmarsat P, Teledisic, Iridiurn and other satellite networks, GSM forward traffic and forward signaling channels 483, analog forward...

...specific applications 484 to 498.

Such application-specific applications such as 484 to 498 include two-way paging, metered billing and debit related data transfer, *PDA*, home arrest, wireless gaming and/or gambling, stationary remote control, and the other shown applications. MPPC 351 is configured to convert any data message it...

...and air interface standard. The VBRAAM method may also be used to convert a message received from a personal computer (PC) 431 that is a *point* of presence on the WWW 352, into any cellular, PCS, or *mobile* satellite signaling and air interface protocols and deliver the selected data message to communicator I 00. The VBRAAM methodology creates in this manner a multi...to Fig. IC, communicator I 00, which may be any communicator device for use in or for a wireless communications network, and configured as a *mobile* phone, a pager, a debit phone (DEBIT), which is a cellular phone configured for metered real-time billing and debit transactions, a personal communication services PCS device, a Personal Digital Apparatus (*PDA*), a stationary device, a *mobile* device control apparatus, or other communicator device operable on a wireless communications network. In this example, the communicator either receives or transmits 219 a selected...

...DCCH pathways of a host cellular network configured for forward messaging specified in Interim Standard IS-95, forward DCCH messages from a Global System for *Mobile* (GSM) signaling and/or authentication channel, or messages sent via the present invention VBRAAM messaging data channel 512.

Communicator I 00 preferably receives and translates...

...response 278 is initiated. In a preferred method, communicator I 00 scans and detects forward downlink network channels of host-serving cellular, PCS, GSM, or *mobile* satellite system 279. Next, communicator I 00 engages with forward network channel 280. Preferably, the communicator I 00 then is assigned and synchronized with a...a credit monitoring company, a debit bank center, a stationary device control and monitoring center for meter reading or remote environmental monitoring, for example, a *mobile* device control and monitoring center for tracking vehicles, ships, material flow, packages, or other applications as in 484-498 in Fig. 1 B. The MCMS...

...I 0 (MC) is shown having received 356 data message 504 from an application-specific bearer/facilitator such as a stationary device monitoring facilitator, a *mobile* device monitoring facilitator, debit bank center 120 as shown in Fig. 2, or the like, via the public switched telephone network (PSTN) I 00 and/or the world wide web 352. The VBRAAM message center (MC) preferably retrieves the CIN, CSN, carrier identification codes (CIC), and serving switch *point* codes from a data storage means, 1 5 such as data storage software, and creates a PSTN/Tl packet. Using a switch, such as VBRAAM...MWI). If, for example, an awaiting message is detected, the detected message is processed and prepared for transmission by assigning the proper WWW Internet destination *point* codes (DPQ, based on the received currently serving carrier identification codes (CIC), switch codes, and particular user assigned CIN and CSN numbers, that were originally...

...and displayed 383 to the communicator user.

PCTfUS97/16176 In Fig. I E, communicator I 00 may be configured and used for personal digital assistant (*PDA*) type applications. For example, communicator I 00, in a *PDA* mode of operation, prepares to transmit 453, a data message 454, text message 455, fax document 456, e-mail 457, computer file 458, or other data message to the MPPC, which is preferably a *point* of presence on the Internet WWW and a *point* of presence within the wireless communications network. The MSC then receives registration status event (RSE) request data packet and analyses the CIN/CSN 46 1...

...HLR/SCP and MCMS via the host SS7 network. The RSE request packet is then relayed 463 to the message center, which is preferably a *point* of presence on the Internet WWW, which scans and analyses the message to determine the type of message and designation.

The HLR/SCP responds 464...message to its designated destination. With reference now to Fig. 2, principal functional elements of a wireless communications networks such as a cellular, PCS, or *mobile* satellite network are shown communicating using the full-duplex VBRAAM methodology. In the example, the VBRAAM communicator I 00 transmits 103 a control channel application...

...the special ten-digit CCAD identification number (CIN) 264 that is included in the A word 125 and B word 133, causes the currently serving *mobile* switching center (MSQ to recognize the received packet as a VBRAAM RSE packet and then route the packet to the CCAD HLR 162 via the ...

...may cause a VBRAAM selected data message 103, to be sent for various purposes, such as two-way communication, paging, control of a stationary or *mobile* device, remote monitoring, and the like. However, for a great majority of VBRAAM data message packet transmission events, communicator I 00 is programmed to automatically direct registration status event (RSE) response packets to be transmitted to the nearest serving cellular or PCS base site IO 1. or to a *mobile* satellite. in this example an Irunarsat P *mobile* satellite 114. Communicator 100, in one embodiment, is equipped with an integrated 900 MHz broadcast pager receiver. The pager receiver may receive alpha-numeric pages...

...that is communicatively linked to MCMS 106 via SS7 115, PSTN I 10, and TUDSO links 105. Communicator 100 may also be equipped with a *mobile* satellite transceiver that is configured for reception of hunarsat P signals. The signals can contain alpha-numeric messages, commands and anti-fraud multi-key encrypted...in Europe and Asia. In a metered billing or debit message embodiment, the method is preferably "added" to cellular and PCS networks, particularly at the *mobile* switching center (MSQ, and requires only about an hour of system programming time. The programming simply involves updating call treatment and routing parameter tables, and creating a new class of debit service, by assigning special *mobile* identification numbers (MIN) termed and previously described as CCAD Identification Numbers (CIN). The CIN is, in this embodiment, a ten-digit I 0 number that is used in the same way as the MIN, but it cannot be used to place a land-to-*mobile* call from the public switched telephone network (PSTN). The CIN may be used for data messaging for system management, user identification, and debit account updating...

...23 PCT/US97/16176 communicator I 00 provide a transparent overlay which increases network capacity, performance, and functionality when used with any cellular, PCS, or *mobile* satellite system that adheres to IS-41 operational specifications. Accordingly, the wireless communications network infrastructure does not need to be modified significantly in order to...the MCMS 106 that a particular message needs to be resent to the same user. For example, when communicator I 00 is operating in a *mobile* environment, the assigned forward message channel may drop the selected message during its transmission event. In such case, the user would typically not be charged...

...is equipped with a broadcast pager and the DPE event is a two-way paging response. The symbol LTMCR is interpreted as a land-to-*mobile* call request and interpreted as a land-to-*mobile* call completion. The symbol HM is interpreted as "hold messages do not send." The symbol NS24 listed below the digit 4 field is interpreted as...action in terms of service request and status response, are preferably deemed registration status events (RSE). However, to the currently serving cellular, PCS system, or *mobile* satellite network, the RSE is nothing more than a cellular phone user, for example, requesting remote feature access operation during a system access origination procedure...

...communicator I 00 always respond to a global action message registration increment, unless signaled to do so by the host carrier, whether cellular, PCS, or *mobile* satellite. Preferably, communicator I 00 is programmed to register with the MCMS HLR 162 every time a communicator user requests service via an RSE. This...to hold all received and stored messages until further notice.

If a communicator I 00 is used in a particular serving cellular, PC S or *mobile* satellite network, it is subject to VBRAAM forward global broadcast messages, unless the user elects not to receive a global broadcast message. For example, a...

...403, which is selected data message, may be configured in any analog word block or digital multi-frame word format used in cellular, PCS or *mobile* satellite networks. For example, it may be configured as an FSK BCH 10 Kbps word, an IS- 1 36 TDMA multi-frame word, an IS-95 CDMA word, or a Global System for *Mobile* (GSM) TDMA word. The VBRAAM forward message word 403 is shown having a 50character message body 404, a nine-character message header 405, and a...

...location update commands and other pertinent automatic vehicle location data (VLD).

In another embodiment, communicator I 00 may be configured as a personal digital assistant (*PDA*) which may be provided with *PDA* keypad 157 as seen in Figs. IO and I 1, that allows the communicator user to send selected data messages to other communicator users with *PDA* configured communicators, Internet file transfer points (FTP), individual Internet users, and designated WEB sites. The VBRAAM-*PDA* user can access the Internet, send messages to other VBRAAM-*PDA* users, receive electronic mail, purchase products and services and the like. The possibilities are many and varied. Full duplex data message 403, which is a...

...one burst. If longer text messages are to be sent then multiple, sequential bursts of additional packets may be used, for example in a VBRAAM *PDA* application. The illustrated VBRAAM multi-word selected data message shown is based upon and resembles a standard origination data packet with enhanced dialing features. This this number ftom another *mobile* or from a landline phone could not reach the communicator I 00 user with the CIN number. 'Me CIN and CSN are used for metered...

...word 131 is preferably a conventionally configured origination packet, with the first word of called address used to send dialed digits entered by a conventional *mobile* phone user, for example. However, with the VBRAAM method, the D word is designated the applicationspecific H word one, or H[I] word 13 1...and is utilized by wireless communications network signaling and switch technicians to enter new data in call handling, number translation, parameter table, data files, etc. *Mobile* identification number (MIN) data files are preferably used by the MSC to identify systems to which different MIN numbers belong. In the preferred VBRAAM methodology...

...message to the MCMS on a particular SS7 network, such as the NACN. Once the MSC identifies the MCMS's HLR 162 as a bonafide *point*-of-presence (POP) on the SS7 network, it relays the entire VBRAAM selected data message. Any MSC that operates on an SS7 network is deemed a switch or service *point* (SP) or service control *point* (SCP). Therefore, the MSC using the VBRAAM methodology operates as an MSC/SCP that identifies and relays the origination/ registration, or RAAM RSE event packet...the VBRAAM inherent anti-cloning and anti-fraud aspects. This anti-fraud methodology is important to the wireless communications network, such as cellular, PCS, or *mobile* satellite, to prevent unauthorized use of their network and to the communicator 100 user from fraudulent use of his or her account. In fact, the...

...present invention's MCMS as an on-line anti-fraud checkpoint. The disclosed VBRAAM anti-fraud features may be downloaded to various

cellular, PCS, and *mobile* satellite I 0 phones at dealer *point* -of-sales. Once the MCMS and its unique data management protocols and messaging protocols are incorporated in a participating network, they seamlessly, and in a...

...two-way short messaging and other messaging functions described, which may be automatically applied and fully utilized by any participating 1 5 cellular, PCS, or *mobile* satellite carrier.

Conventional IS-41 and SS7 system requirements specify that an operating SS7 service control *point* (SCP), such as an HLR, must be redundant. The disclosed CCAD-MCMS is preferably designated as an HLR/SCP, and therefore two HLRs are provided...frame relay link to the DBC. The DBC may be a bank, credit union, brokerage firm, I 0 etc., that can offer cellular, PCS, and *mobile* satellite debit services as an integral part of normal ATM, or credit card services such as the VISA corporation affinity user or normal registered merchant...that is configured to provide voice and data debit services, and purchase air time and data packet credit. The communicator I 00 user's cellular *point*-of-purchase dealer 252 may be configured to interact directly with the MCMS and act as a debit user data base, via a conventional merchant compatible. The communicator I 00 can also receive messages from a *mobile* satellite, such as the Inmarsat P satellite I 1 4 depicted here, as long as communicator I 00 is configured for such use. The MCMS...

...hub 109 transmits an uplink message, and then the satellite relays and transmits the message to communicator I 00.

A unique "caller pays" land-to-*mobile* call method may be implemented using VBRAAM methodology and communicator I 00. In this embodiment. the caller, using a landline telephone 1 1 3 in Fig. 2, places a call using a "900" number 153. The 900 number land-to-*mobile* call is routed to the MCMS 106. The D.?ICMS interrogates the CCAD HLR 162 to deterraine in which serving cellular, PCS, or *mobile* satellite network communicator I 00 is operating. Every time an MSC sends a origination/registration invoke request to any HLR, including the CCAD HLR, the...

...900- or 800-number charges are incurred by the caller. The communicator I 00 register/timer status has not been affected by this land-to-*mobile* call. No other calls can be placed to the debit phone user unless the PIN number is entered and the landline caller uses the 900...

...to a visitor location register (VLR) I 0 249 as in Fig. 5. The VLR is a data base that is also a service control *point* (SCP) on an IS-41/SS7 network. The VLR operates in many respects like an HLR. The VLR keeps records of all roaming *mobile* users actively operating in that particular serving network for a 24-hour period. Each roaming *mobile* user is assigned a temporary local directory number (TLDN) or pseudo (SUTTO) number, that is stored in, for example, the currently serving cellular system's...

...location register (VLR). This number is preferably used if any calls are received at the MSC that are designated as active roamers. When a roaming *mobile* user first registers in a serving MSC operations area, the home cellular or PCS system's HLR is interrogated in the same manner as heretofore described, If the *mobile* roamer's electronic serial number (ESN) and the *mobile* identification number (MIN) is sent to the home system HLR, and if the roamer's data files are present in the HLR and his account...

...SS7 network to the home HLR. Therefore, a current location of all active and registered users may be maintained. When, for example, a land-to-*mobile* "900" number is dialed by a landline PSTN caller II 3, the call is routed to the MCMS HLR 162, 171 via the MCMS autoinatic...the user via the CCAD-HLR 162. Within the HLR are carrier identification codes (CIN) and currently serving switch codes as well as SS7 origination *point* codes (OP) and destination *point* codes (DPI). With this data, the ADB II 9 then identifies the participating paging network that also operates

in the same geographic service area (GSA...is accomplished, the previously prepared selected data message is sent via the host SS7 network II 5 by being pointed to a different signaling transfer *point* (STP) 109 via the SS7 network,
W6 98/02004 PCTfUS97/16176
34
so that it will reach the paging network control center (PNCC) 22 1...

...and then transmitted to the DCCH equipped communicator I 00. A similar procedure applies if the communicator I 00 is equipped with an Inmarsat P *mobile* satellite receiver. In such an application, the MCMS 106 prepares a message for transmission to the satellite network control center (SNCC) 109, via the PSTN...also shown in operable relationship to one another. In operation and use, keypad 164 is preferably used only for dialing landline telephone numbers or another *mobile* numbers. Menu keys 176 are pressed to scroll through and find predetermined or "canned" message responses for the communicator's two-way paging response feature ...

...procedure causes any user-originated VBRAAM RSE or VBRAAM selected data message to be transmitted in the heretofore described manner. An optional personal digital assistant (*PDA*) keypad 157, in Fig. I 1, is shown communicatively linked to communicator 100.
I 0 The VBRAAM method and associated CCAD-VBRAAM methods for two-way messaging can support user group messaging, user group broadcast messaging, *point*-to-*point*, and *point*-toomen *point* communications, as in Figs. 12 and 2 1. For example, a VBRAAM communicator I 00 user operating in a New York City cellular market, represented...

...PIN number I 1 8, as in Fig. 12, and presses the send button. Including the PIN insures a secure and authorized VBRAAM user group *point*-to-omen *point* request. Additionally, because of the PIN number there is no ambiguity as to who authorized the user group message. The selected message is then sent...

...here by the Los Angeles MSC 434. An account may be set up so that any one business user in a designated group may send *point*-to-omni *point* messaging to other users in that group. Regardless of who is sending the message, such as the cornmunicator I 00 user in L.A., the send a *point* -to-omiii *point* message to all users.

For example, a business center operator, utilizing an Intemet-based PC terminal 43 1, can send a VB RAAM forward or...true voice call. The dialed digit stream is sent via the SS7 network along with a IS-41 remote feature control request invoke to a *mobile* subscriber's home system HLR. Once the home system HLR receives the invoke message, the HLR instruction contained in the dialed digit stream is performed...

...recorded voice message box such as an integrated voice response data base. The stutter tone or voice recording is routed and then transmitted to the *mobile* subscriber, and the remote feature control operation is essentially concluded. When the forward or reverse voice channel is routed, it remains so for about three...

...call procedures, the remote feature control operation may be set up in various classes of service. One class of service, for example, might allow the *mobile* cellular subscriber to dial *741 plus a ten-digit directory number that he or she wishes all land-to-*mobile* calls to be routed to, when the communicator or cellular phone and is no longer active on the network. This instruction is then sent to...communicators. The VBRAAM method, when combined with the aforementioned reverse control channel application-specific RAAM messaging procedure, creates a new paradigm in cellular. PCS and *mobile* satellite two-way data communications.

Accordingly, the VBRAAM method can used for wide variety of two-way data messaging applications, such as paging, text transfer, metered billing

and debit applications, control for remote stationary devices and *mobile* devices, and other applications as described or obvious from the description. The VBRAAM method can be applied to any host cellular, PCS, and *mobile* satellite network without expensive network infrastructure add-ons, and requires no MSC or SS7 network software upgrades. The VBRAAM method operates transparently, and in effect...

...Fig. 14, the dual personality aspects of communicator 100 are shown. A conventional cellular base site IO 1, in this example, is the initial access *point* for communicator I 00 operational personalities. However, other wireless communication networks may also be read into this example. The CIN/CSN data messaging and data...to the MCMS and HLR/SCP that this particular communicator I 00 user is powered up, is now active on the designated cellular, PCS, or *mobile* satellite network, and automatically and transparently requesting authentication thereby.

Further, in the digit 3 data field space, if communicator I 00 is powering up as...SCP sends an authorization message upon the communicator I 00 user's next Call Request attempt.

The H[I] word 338 preferably also contains a *mobile*-to-land call (ML) indicator, and a land-to-*mobile* (LM) digit indicator 41 1, as seen in the RSE EVENT legend 41 0. For example, the ML indicator is always a number 8 in digit field 3 when a *mobile*-to-land call is being placed. The LM indicator is always a 9 in digit field 3 when a land-to-*mobile* call is being accepted. If a land-tomobile caller is calling a communicator I 00 user in a metered billing and debit application, and communicator...

...EVENT legend 41 0. In this instance the DC indicator resides under the Digit 4 data field space. A dropped call occurs quite frequently to *mobile* telephones, especially while traveling in a motor vehicle. The base site and *mobile* user typically will lose radio frequency link, and the *mobile* user will have to place another call to resume the conversation that was taking place. If a dropped call occurs, the next Call Request EVENT...communicator I 00 via the PSTN network, or alternatively a message to be sent via a broadcast paging network, or a message sent via a *mobile* satellite network, or a message sent via an IS- 1 36 Digital Control Channel (DCCH) compatible network and/or the VBRAAM forward or reverse messaging...embodiment of the invention, there is shown an air interface uplink pathway which may be utilized, for example when communicator 100 is configured as a *PDA*. In this ...tone to the currently serving base site so as to maintain a fullduplex SAT loop. If communicator I 00 is configured as a full-duplex *PDA*, the reverse voice or traffic channel is used as a data or text messaging medium in the same manner as that described for the forward voice or traffic channel. Communicator I 00, thus configured as a *PDA*, may now function as a mini computer for selected data messaging, such as text messaging, computer file transfer, multi-character me3saging, and the like. For...

...web (W'@ 352 via an Internet socket. The MPPC 351 preferably contains its own (WWW) 352 socket address.

Accordingly, MPPC 351 may ftinction as a *point*-of-prescrice on the Internet WWW 352. MC 353 includes data processing terminals that also preferably function as points-of-presence on the WWW 352...be transmitted between individuals, between groups or to groups of individuals, and from individual communicators or groups of communicators to control remote stationary and/or *mobile* objects and devices. Such selected data messages may be communicated over vast distances

such as in Fig. 2 1...

...two-way bandwidth on demand data messaging system. The method and apparatuses may be used with any wireless communications network, such as

cellular, PCS, or *mobile* satellite, and may be communicatively linked with ...the VBRAAM method may be used for full-duplex data text, data, fax, computer file transfer, two-way paging, electronic mail, Internet messages and service, *point*-to-*point* and pointto-omni *point* communications, global positioning system data for automatic vehicle location systems, fleet management, motor vehicle anti-theft and anti-theft recovery, emissions standards 1 5 compliance monitoring, personal tracking and protection, child location, home arrest, behavior modification, medical alert, outpatient monitoring, debit and metered billing for cellular, PCS and *mobile* satellite networks, anti-fraud and anti-cloning applications, and other stationary and mobilebased systems and services. Additional application-specific systems and services such as fullduplex...

...load partitioning, and electrical load management for commercial and residential uses, smart home management systems, security systems, gas and oil well head management and control, *vending* *machine* management and control, environmental systems *management* and control, *point* -of-sale data messaging, credit card verification, and the like. The reverse RAAM short messaging aspect of the system is transmitted on the control channels...

Claim
... means to reserve and route selected voice channels or traffic channels in response to the remote feature access control operation, the method comprising:
configuring a *mobile* switching center (MSC) to route said selected voice channels to a multi-port protocol converter (MPPQ for transmitting a selected data message on said selected...

...claim 1, wherein said communicator receives a data packet from a master central monitoring station (MCMS) communicatively linked to a downlink communications path including a *mobile* satellite.

7 The method of claim 1, wherein said communicator receives a data packet from a master central monitoring station (MCMS) communicatively linked to a...

...from a master central monitoring station (MCMS) communicatively linked to a downlink communications path including a forward digital control channel of a global system for *mobile* (GSM) signaling channel.
10 The method of claim 1, wherein said communicator receives a data packet from a master central monitoring station (MCMS) communicatively linked...digit field for transmission on said wireless communications network.
1 5

25 The method of claim 2, wherein said selected dialed digit stream includes a *mobile* identification number (MIN) utilized to transmit a communicative message.

26 The method of claim 25, wherein said selected data message includes a four-digit voice...related to control of a stationary apparatus.

32 The method of claim 1, wherein said selected data message includes data related to control of a *mobile* apparatus.

33 The method of claim 1, wherein said selected data message includes data related to a billing I 0 methodology.

34 The method of...AMPS and TACS, FSK modulated reverse control channel RECC 10 Kbps 48-word BCH hamming coded control channel means at a base transceiver and said *mobile* switching center (MSC).
66 The method of claim 58, further including means for processing and routing control channel application-specific data from a base transceiver station and a *mobile* switching center to a control channel application

data master central monitoring station (MCMS) via a modem.
- WO 98/02004 PCTfUS97/16176
54

67 The method...IS-41 remote feature control operation.
1 5

71 The method of claim 69, wherein said remote feature access control operation is communicated to a *mobile* switching center (MSC), and one or more translation tables route said selected voice channel to a signaling unit.

72 The method of claim 69, wherein...

...claim 69, wherein said communicator receives a data packet from a master central monitoring station (MCMS) communicatively linked to a downlink communications path including a *mobile* satellite.
- WO 98/02004
56 PCTfUS97/16176
76 The method of claim 69, wherein said communicator receives a data packet from a master central monitoring...from a master central monitoring station (MCMS) communicatively linked to a downlink communications path including a forward digital control channel of a global system for *mobile* (GSM) 1 5 signaling channel.

79 The method of claim 69, wherein said communicator receives a data packet from a master central monitoring station (MCMS...

...89 The method of claim 69, further including means for processing and routing control channel application-spccific data from a base transceiver station and a *mobile* switching center to a control channel application data master central monitoring station (CCAD-MCMS) via a modem.
- WO 98/02004 58 PCTfIJS97/16176

90 The...wireless communications network; and means for transmitting a selected data message on the wireless communications network in response to receiving said data message from a *mobile* switching center (MSC).
- WO 98/02004 PCTfUS97/16176
59

93 The apparatus of claim 92, further characterized in that said means for data communication on...for receiving and storing said control channel origination data packet at a base
station;
means for relaying said control channel origination data packet to a *mobile* switching center
(MSC); and
means for activating a selected service by loading parameter table values for said identification number and said serial number at the...
?